AUGUST 23, 1954

Maintenance Men Get a Break . . . p. 36

RAILWAY AGE

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GENERAL MOTORS LOCOMOTIVES

What's Next in Regulation?

"Trailiner" Flat Car Design

Revenues and Expenses of Class I Roads

Freight Operating Statistics

Arbitrators Decide on 5¢ Boost for BofLE

81

shall be as thoroughly inspected as construction will permit.

Tubes removed.

305. All fire tubes of boilers in service shall be removed at least once every four years. After the tubes are taken out, the inside of the boiler must be as thoroughly cleaned and inspected as construction will permit. The boiler must be examined for cracks, pitting, grooving, or indications of overheating, and for damage where mud has collected or heavy scale formed. It must be seen that braces and stays are taut, that pins are properly secured in place, and that each is in condition to support its proportion of the load.

Method of inspection.

Braces and stays.

Cracks.

306. Any boiler developing a crack in shell sheets shall be removed from service until proper repairs ha[illegible]
A report [illegible]

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..on steam locomotive repairs

..are better spent on Diesels

..are best spent on TRAIN MASTERS

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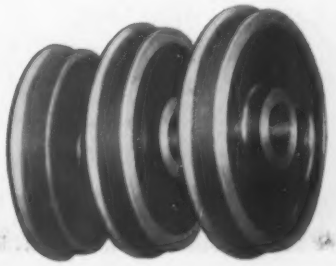

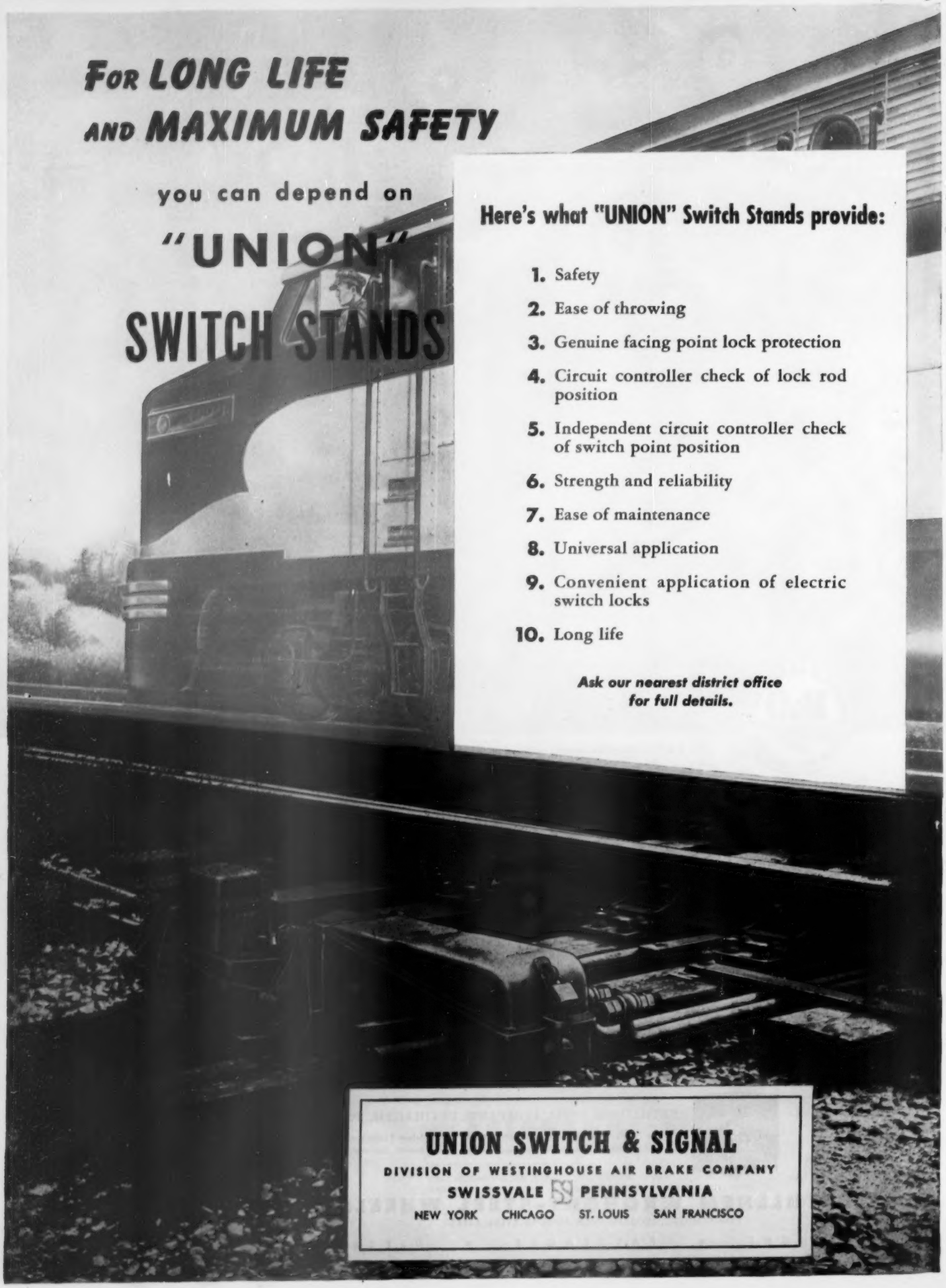

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August 23, 1954 **Vol. 137, No. 8**

Week at a Glance

The Long Island bankruptcy has ended, and the road has embarked on a 12-year, $60-million rehabilitation program. 7

The "trainman package" wage settlement has been recommended for engineers, and accepted by yardmasters. 11

FORUM: De-regulate the regulated—or extend regulation? The choice between the two methods of restoring common carrier equality should be made on the basis of practicability. 29

New flat car design details are embodied in 100 "Trailiner" cars being assembled at the New Haven's Readville shops. 30

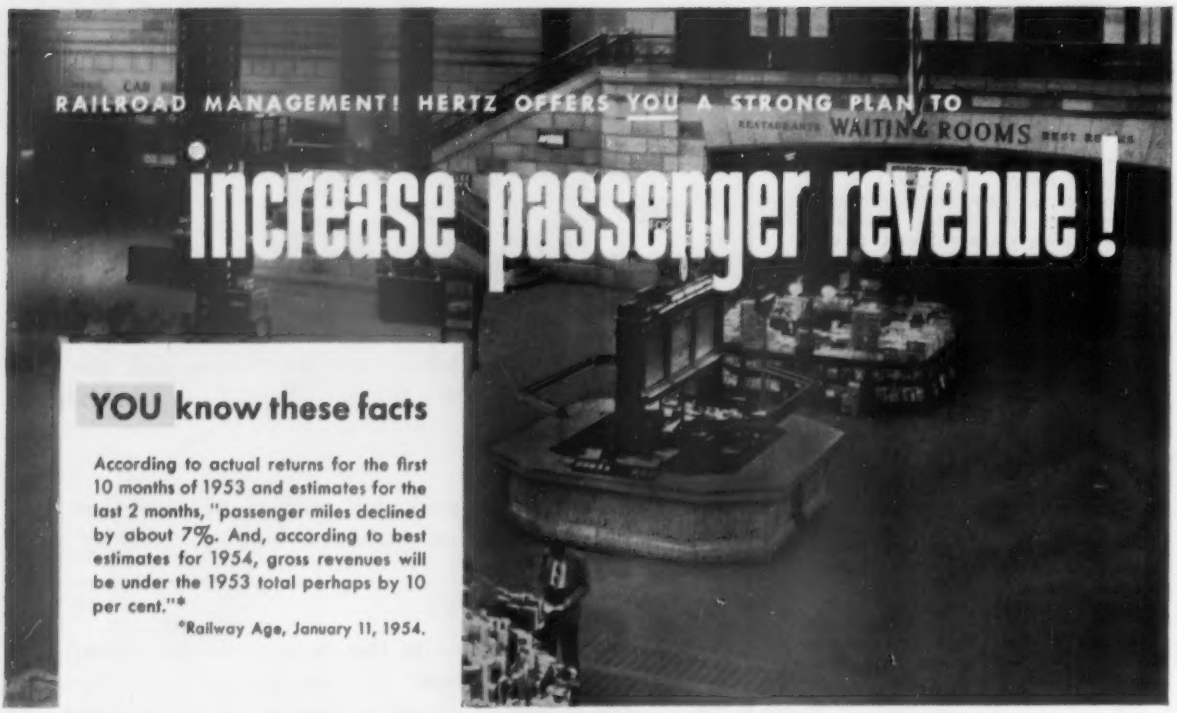
Put together the jobs of industrial development, real estate and real estate taxation, says a contributor with experience in all three fields. 32

A short line fills in 52 of its 60 bridges to cut maintenance, repair and replacement costs. 34

Maintenance men get a break — and produce better work at less cost — under the Frisco's modern techniques. 36

BRIEFS

A "time lag" bill for wage negotiations has been proposed by the AFofL Brotherhood of Railroad Signalmen. In a resolution passed unanimously by the 200 delegates at the union's 32nd convention in Chicago last week, other rail unions were urged to secure amendments to the Railway Labor Act "providing that when any requests for improvements are made by one or more of the standard railway labor organizations upon any individual carrier or group of carriers in accordance



YOU know these facts

According to actual returns for the first 10 months of 1953 and estimates for the last 2 months, "passenger miles declined by about 7%. And, according to best estimates for 1954, gross revenues will be under the 1953 total perhaps by 10 per cent."*

*Railway Age, January 11, 1954.

YOU also know that inter-city driving is largely responsible for the decreasing revenues.

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1 TRY the Rail-Auto Plan yourself. Enjoy its many advantages. See for yourself why thousands of travelers prefer it to highway travel.

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Current Statistics

Operating revenues, six months	
1954	$ 4,609,299,381
1953	5,327,263,239
Operating expenses, six months	
1954	$ 3,697,687,869
1953	4,022,941,871
Taxes, six months	
1954	$ 441,829,475
1953	642,493,641
Net railway operating income, six months	
1954	$ 345,222,857
1953	548,668,653
Net income, estimated, six months	
1954	$ 224,000,000
1953	418,000,000
Average price railroad stocks	
August 17, 1954	71.86
August 18, 1953	63.11
Carloadings, revenue freight	
Thirty-two weeks, 1954	20,279,195
Thirty-two weeks, 1953	23,469,675
Average daily freight car surplus	
Week ended Aug. 14, 1954	81,270
Week ended Aug. 15, 1953	22,521
Average daily freight car shortage	
Week ended Aug. 14, 1954	417
Week ended Aug. 15, 1953	2,109
Freight cars delivered	
July 1954	1,801
July 1953	6,370

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Week at a Glance CONTINUED

with section 6 of the act, that such requests will become effective not later than 60 days from the date of notice served, unless a longer time is mutually agreed upon."

A mechanical refrigeration unit tailored specifically for the meat packing industry will soon be available from the Saylor-Beall Company. The new unit will feature the same Dole holdover cold plates used in the North Western car described in the June 7 *Railway Age*, but they will be mounted on the sides instead of the top of the car to leave that space free for meat hooks.

Another railroad history — this one of the Norfolk & Western — will make its appearance August 25. The 380-page book, written by Joseph T. Lambie, will be titled "From Mine to Market: The History of Coal Transportation on the Norfolk and Western Railway."

A special "Safe Freight Handling Car," specifically designed for instruction of officers and employees in safe handling of freight shipments, has just gone into service on the Southern. Built in company shops, it includes a 60-seat theater, visual training equipment, and crew living quarters.

The Ogden Gateway case has been delayed again at the request of the federal court to which it has been appealed. The ICC postponed from October 1 to December 1 the effective date of its decision.

Sixty-two flood damage suits, arising out of the flood of the Kaw river in 1951, have been dismissed from the U. S. District and Jackson County Circuit Courts in Kansas City. Forty cases—involving claims totaling almost $500,000—were dismissed when Federal District Judge Albert A. Ridge signed stipulations and orders drafted by attorneys of both the carriers and plaintiffs. Twenty-two more cases were dropped in the circuit court when the plaintiffs filed stipulations of dismissal. But some 200 similar suits remain on file—some of them against initial rail carriers in other states.

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Known for speedy installation—one minute does it—just three simple steps—and it's set for a lifetime

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Long Island Bankruptcy Ends

Begins operation as "railroad redevelopment corporation"—ICC authorizes issuance of securities to finance $60.3-million rehabilitation program

The 5½-year bankruptcy of the Long Island was ended August 12, immediately following Interstate Commerce Commission approval of the road's application, reported in *Railway Age* July 26, page 60, to issue new securities aggregating $67,585,983.

On the same date, the LI began operation as a "railroad redevelopment corporation," a status accorded it by laws enacted at a special session of the New York state legislature last June. On the following day (August 13) it put into effect a fare increase averaging 20%, which is intended to finance a $60.3-million rehabilitation program upon which the company already has embarked.

The fare increase and the improvement program were key factors in the plan for terminating bankruptcy proceedings worked out between the parent Pennsylvania and the Long Island Transit Authority a few months ago. The laws passed by the New York legislature and ICC approval of the road's new securities were both designed to implement this plan.

Improvement Program—The improvement program has been increased from an originally-estimated $58 million-plus to about $60.3 million, the larger figure having been made possible by settlement with the state of New York of the railroad's grade-crossing elimination obligations. The program now calls for purchase of 184 new air-conditioned passenger cars, to cost an estimated $24.3 million; modernization of 696 existing cars ($21.5 million); and improvement of electrical distribution facilities, shops and shop equipment, freight facilities, motive power, stations and track ($14.4 million). The new cars are to include 125 for electrified lines, 57 for non-electrified lines, and two Budd rail-diesel cars for the Montauk branch. (See Equipment and Supplies column.)

Bids expected to cover "more than 100" of the new cars, at a cost of about $15 million, already have been received from four builders, and orders are expected to be placed within a few weeks. The rest of the cars will be ordered next year. Rehabilitation of existing cars also is to get under way immediately, with about half the work to be completed within three years.

Securities—Securities authorized by the ICC include bonds to cover a $5.5-million loan from the PRR; $51,728,000 of general mortgage bonds (including the loan-covering issues); an interest certificate of $9,857,983; and an unsecured promissory note for $6,000,000. The PRR loan will be used to cover down payment on new equipment, the cost of which is expected ultimately to be repaid out of the 20% fare increase.

The PRR has agreed not to receive any dividends, interest or principal payments on its present investment in the LI during the latter's redevelopment period, which is to run for 12 years. During the first nine of those 12 years, the LI will, additionally, be exempt from all state and local taxes except real estate taxes, and those will be "frozen" at levels at which settlements already have been made with the city of New York and with Nassau and Suffolk counties.

Any earnings of the LI during the 12-year redevelopment period, over and above operating expenses, reduced taxes, existing grade-crossing and equipment obligations, and cost of the specified improvement program, are to be spent only for further additions and betterments, as ordered or permitted by the New York Public Service Commission. That commission is to retain the power to review, but not to prevent, further fare increases. In view of the authorized 20% fare increase, no further action is to be taken on requested increases of 25% and 34% previously pending before the ICC and the NYPSC, respectively.

City Opposes Plan — The only serious opposition to the bankruptcy-ending redevelopment plan has come from the city of New York, which unsuccessfully sought a hearing to oppose the security approval before the ICC, and which has now announced that it will attack the plan in both state and federal courts.

New Board Meets—On August 18 the Long Island's new board of directors held its first meeting. Nine members were hold-overs from the old board and six new members were

STUDY OF SPAIN'S "TALGO" TRAIN was the object of a recent trip to Madrid by a group of American railway mechanical engineers *(Railway Age*, July 26, page 4). Shown here, with "Patentes Talgo" engineers, are Carleton K. Steins, mechanical engineer, Pennsylvania, and chairman of the American group (center, with pad); Gordon T. Wilson, engineer car equipment, New York Central (behind Mr. Steins); George L. Goebel, mechanical engineer, New Haven (left of Mr. Steins); and John Furrer, manager of the Talgo division of ACF Industries (right of picture).

elected, including the five "public" members named by Governor Dewey of New York under the terms of the redevelopment legislation. Former officers were reelected, including as president Walter S. Franklin, former president of the Pennsylvania. The road's new general manager, Thomas M. Goodfellow, also was elected vice-president.

Purchase Offer Accepted By Illinois Terminal Board

A $20,015,635 purchase offer by a group of eight St. Louis area railroads was accepted by directors of the Illinois Terminal at a special meeting in St. Louis August 18. The offer remains subject to approval by the road's stockholders and by the Interstate Commerce Commission. The purchase offer was estimated to leave about $16.50 per share for the common stock after retirement of first mortgage bonds. At press time for this issue, it was indicated that stockholders would vote on the sale in the near future, but no specific date was set.

The winning group was represented at the meeting by Arthur K. Atkinson, president of the Wabash. Other roads in the group which would share equally in ownership of the IT are the Baltimore & Ohio; Chicago & Eastern Illinois; Chicago, Burlington & Quincy; Gulf, Mobile & Ohio; St. Louis-San Francisco; Litchfield & Madison, and Illinois Central. Mr. Atkinson indicated that other roads might join the group on an equal basis; and added that the Nickel Plate had expressed an interest in so doing, although its board had not acted on the idea so far.

The group plans to continue independent management and operation of the Illinois Terminal. Headquarters of the road are expected to remain in St. Louis and its management will continue without change. Mr. Atkinson stated that the offer would have no effect on the road's efforts to discontinue all remaining passenger service in the state of Illinois (*Railway Age*, July 5, page 8).

A second purchase offer, presumably that of Kidder, Peabody & Co., on behalf of the Toledo, Peoria & Western, was turned dwn by the IT board. It was reported that this offer came o about $14.50 per share of common stock after retirement of first mortgage bonds. Under the Kidder Peabody proposal (*Railway Age*, August 16, page 14), the road's McKinley bridge over the Mississippi river at St. Louis would have been transferred to the Sarjem Corporation of New York and ultimately to the city of Venice, Ill., where the eastern end of the highway and rail bridge terminates.

The IT presently operates about 364 miles of line, largely in Illinois. It links a number of central Illinois cities, such as Peoria, Springfield, Decatur, Champaign-Urbana and Alton with the St. Louis terminal area. It also has extensive terminal trackage in the industrialized area along the east bank of the Mississippi between East St. Louis and Alton. Its freight service is diesel powered, while the remaining passenger trains are electrically operated.

New York Central. — *Trackage Rights.*—The ICC has authorized this road to acquire trackage rights over 1.1 miles of the Erie's branch between Franklin, Pa., and Oil City. The arrangement will be a substitute for operations over a parallel NYC line, abandonment of which has been authorized by the commission.

Traffic

First Quarter Estimates Of Loadings 11% High

Carloadings for the first quarter of 1954 were 11% under the estimates given by the 13 Regional Shippers Advisory Boards.

In his latest comparison of forecasts with loadings, Arthur H. Gass, chairman of the Car Service Division, Association of American Railroads, announced that each of the boards was high in its own territorial estimates.

The overestimates ranged from 2.4% in the Pacific Northwest to 22.2% in the Alleghany district. On a commodity basis there were overestimates in 25 categories and underestimates in seven. Overestimates ranged from 2.1% for potatoes to 26% for iron and steel; underestimates from 0.03% for fertilizers to 47.7% for hay, straw and alfalfa.

Law & Regulation

ICC Dismisses Seatrain Case

The Interstate Commerce Commission has granted the complainant railroads' application to withdraw their case against Seatrain Lines, Inc. (*Railway Age*, August 9, page 12). Changes in the car service and per diem agreement and recently-negotiated rate agreements prompted the railroads' decision to withdraw.

The Pennsylvania, in a separate petition, has requested discontinuance of an investigation of a tariff covering through routes with Seatrain via Edgewater, N.J.

This road also cited changes in car service and per diem rules, and its own agreement with Seatrain establishing through routes and joint rates from New Jersey to the Southwest, as basis for the discontinuance.

Operations

West Coast Superintendents Look at Details of Job

A program devoted largely to details of the daily job of the division superintendent and his staff characterized the fifth annual "Pacific Coast Post-Convention Meeting" of the American Association of Railroad Superintendents, held in Portland, Ore., August 5-6. Designed to give operating officers in the Coast area the opportunity to participate more widely in affairs of the organization—conventions of which are customarily held in Chicago—these post-convention meetings are built around prepared discussions of selected committee reports previously presented at Chicago (*Railway Age*, June 21, page 37).

"How to Be a Super Super" was the theme of C. E. Crippen, general manager, Milwaukee, in what he termed "an inquiry together" into the principles of the association. He characterized the superintendent's job as complex—with obligations to the corporation, to customers, to the economy, to the community, and to himself.

"Being a superintendent is getting to be a more complex job all the time; it used to be a case of getting trains over the road; now it's a little bit of everything." Thus W. C. Smith, superintendent, Northern Pacific, keynoted his discussion of "Improved Public and Employee Relations."

He urged his colleagues to participate enthusiastically in community activities and to get acquainted with civic leaders. "You can't leave it all up to the traffic department—they're spread pretty thin." He counseled officers also to "get out on the railroad and stop in at industries you serve; look over their track layout and switching needs." He praised a new development on the NP, by which members of operating forces are given a course in traffic, prepared by that department, which helps "break down departmental barriers."

Cutting Paper Work—"Railroads not only move cars—they also move paper." How they can move less of the latter was the target of N. A. Sorensen, supervisor of methods and standardization of the Southern Pacific, in a discussion of "Use of Business Machines for Railroad Yard Operations."

The speaker emphasized that, "In any installation where many offices and departments are involved, it is essential that liaison be established through the medium of an overall coordinator." Mr. Sorensen expressed the belief that railroad yard clerical forces are fully capable of precision work with machines—providing they and their supervisors are brought into the plan from the beginning and are told frankly the results of mechanization. To overcome fear of loss of jobs, he sug-

gested "selling" the point that "machines make your job easier." On the SP, normal turnover of personnel has taken care of the problem of job loss.

RRs Overseas—A summary of a three months' study of European railroads constituted the August 5 luncheon address by Robert C. Madsen, assistant to superintendent, Western Pacific. He called particular attention to the rapid electrification of French lines, with electric traction accounting for more than 33% of service performed; and to the high sustained speeds of crack passenger trains—in one case, 87 mph for 165 miles.

For packages weighing less than 100 lb, the French establish rates which are the simple product of weight and distance. While merchandise cars are being handled at freighthouses, mechanical inspection and light repairs are accomplished, to save yard time.

On British lines, Mr. Madsen was impressed by the wider range of duties assigned the traffic—or "commercial"—department, compared with U.S. practice. Soliciting, billing, storing, and forwarding of traffic from a freighthouse is under complete jurisdiction of that department—not the operating forces. He pointed to the warehousing of freight on railroad property as an inducement to use rail service, and to a bonus system for pick-up and delivery truck drivers for solicitation of business.

Holding Investigations — "One thing can be agreed upon—investigations are a pain in the neck." So characterized was the subject, "Recommended Methods for Conducting Investigations," by R. N. Whitman, superintendent, Great Northern, who led its discussion.

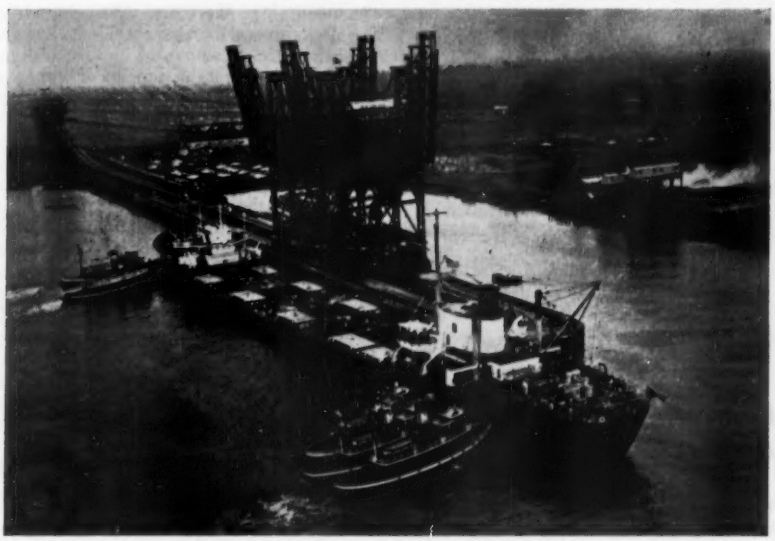
The speaker said the most important consideration is to make sure there is no chance of disciplining the wrong man. "It is important, too, that the officer holding the investigation *be* the boss, and not let some guy in the back of the room take over." The GN uses a recording machine and plays the recording back to witnesses for verification of testimony.

C. P. Fisher, general manager, Chicago Union Station, asserted: "We hold too many investigations on railroads." He believes they are necessary in flagrant cases, like theft, drinking, running signals and insubordination. But, for other offenses, he holds it better to reprimand the employee strongly—in the presence of the rest of his crew—"they'll convict him themselves." H. L. Kimble, superintendent, Pennsylvania, pointed out: "The worst thing we can do is to serve unjust discipline."

Clearing Wrecks — In discussing "Methods and Tools for Clearing Derailments," J. D. Killian, superintendent motive power, Union Pacific, asserted that, "because a good railroad has very few wrecks," it is necessary to keep wrecking crews trained, through classes similar to those conducted in diesel locomotive operation. The speaker expressed the belief that, in general, modernity and condition of wrecking equipment does not parallel that of revenue rolling stock which wrecking equipment must service. He urged greater use of off-track equipment, especially bulldozers, and the training of operators to get the most economical work out of them.

L. P. Hopkins, superintendent, SP, praised wreck trucks as "miracle performers—both fast and inexpensive." G. W. McLaughlin, master carbuilder, SP, reviewed the usefulness of Caterpillar tractors equipped with winch and boom for removing wrecked cars. F. N. Stuppi, superintendent, Santa Fe, stressed the importance of frank dealings with the press during emergencies. Another public relations "plus," he said, is provision of free meals for delayed passengers. B. W. Taylor, president of the association, assistant to vice-president, PRR, and presiding officer of the meeting, pointed out that emergence of radically new types of motive power necessitates careful study of methods of efficiently rerailing them, unless large investments are to be jeopardized.

"Responsibility for Efficient Use of Freight Equipment" was the subject of a panel of operating *versus* transportation officers. On the operating side were C. I. Morton, L. P. Hopkins, and S. E. Hertzog, superintendents on the Seaboard Air Line, SP and Milwaukee, respectively. On the transportation side



FIRST CARGO of Labrador iron ore —20,000 tons of it—arrived at the Pennsylvania's new $10-million ore pier at Greenwich Point, Philadelphia, on August 5. Arrival of the ore from Seven Islands, Que., on the SS Hawaiian, coincided with official dedication of the new pier, enlargement of which is now under consideration (*Railway Age*, August 16, page 10).

SHIPPERS FAVOR ALL-RAIL TRAILER-LOT SERVICE

Railroads should be permitted to offer trailer-lot service direct to the shipper, at door-to-door charges competitive with established common carrier truck rates, according to eight out of 10 respondents to this month's traffic poll conducted by *Railway Freight Traffic*, companion publication of *Railway Age*.

Opinions registered by a panel, whose membership extends from coast to coast, give an inclusive cross section of industrial traffic managers' thinking on one of the most hotly discussed questions in today's transportation scene. All respondents are in the industrial traffic field, or are traffic directors of chambers of commerce.

Those favoring the service gave as reasons for doing so their opinions that it would: (1) Encourage legal competition between different types of carriers; (2) permit railroads to improve their service; (3) facilitate railroad off-line service; (4) help reduce handling costs at freight terminals; (5) lower loss and damage; and (6) aid in carrying out industry's policy of small-lot purchases and lower inventories.

Panel members voting against the proposed service did so because they felt it would not improve service; but would: (1) Cause confusion in the rate structure; (2) curtail existing truck service; (3) violate Section 2 of the Interstate Commerce Act; (4) lack flexibility, and (5) discriminate against small town shippers, to whom the service might not be offered, in favor of their metropolitan competitors.

were C. H. Grant, general superintendent transportation, SP; and W. S. Hewson and G. S. Allen, superintendents transportation of the Canadian National and WP, respectively. W. H. Schmidt, executive editor, *Railway Age*, was moderator.

Rates & Fares

ICC Reports on Two Northwest Rate Cases

Railroads serving the Pacific Northwest have been upheld by the Interstate Commerce Commission in one truck-competitive rate case, but lost another recent decision.

Division 2, reporting in I&S Docket 6121, ruled that reduced rates filed by the railroads on tank car loads of asphalt are just and reasonable. The lower rates were proposed, the commission reported, to stem the "constantly increasing loss of traffic [to tank truckers] since 1944" in shipments from Montana and Wyoming and from Portland and Seattle to Sand Point, Idaho, and Spokane.

In I&S Docket 6170, Division 3 ruled that a proposed station-to-station "all-freight" rate of 60 cents between Seattle and Vancouver was not proved to be just and reasonable. Protesting truck interests claimed the rate would "jeopardize" their operations north of Seattle. The rail carriers had sought to attract a larger share of LCL traffic, and to meet competition of motor carriers and a coastal steamship line.

New Version of Rule 10 Gets Going in Far West

A more liberal version of Rule 10 of the Consolidated Freight Classification was placed in effect in Mountain Pacific territory on August 2.

The "modified" Rule 10 became effective on mixed-carload shipments moving within that territory. It also was made applicable on shipments moving between Mountain Pacific and Western and Southwestern territories.

A still more liberal version—"streamlined" Rule 10—was placed in effect for traffic moving eastward from Mountain Pacific territory to Official and Southern territories. Westbound between these points the "modified" rule applies.

Effect of these changes in Rule 10 is to place Mountain Pacific territory on generally the same basis as the West and Southwest. Traffic moving east to Official and Southern territories is an exception.

Rule 10 of the Consolidated Classification is the so-called mixing rule. It governs rates and minimum weights on mixed carload shipments. The liberalizing which has occurred in Mountain Pacific territory resulted from a decision handed down earlier this year by the ICC (*Railway Age*, February 22, page 16).

The ICC proceeding, docketed as No. 30994, was based on complaints filed by the Western Traffic Conference and other groups. The complainants charged that Rule 10, as applied in Mountain Pacific territory, was unduly prejudicial and favored shippers located at points east of Mountain Pacific. They asked the commission to prescribe "streamlined" Rule 10 for traffic moving from, to and within their territory.

Official and Southern territories have had streamlined Rule 10 in effect for some time; Western and Southwestern territories, on the other hand, have had the modified Rule 10. The two versions are substantially the same. The difference is that the "streamlined" rule permits use of straight carload and/or all-freight rates in rating a mixed carload, while the modified rule does not.

Western Roads Turn Down Drought Relief Rate Plea

Western roads, on August 19, advised Secretary of Agriculture Ezra T. Benson that they could not grant his request for a 50% reduction in freight rates on hay and livestock for drought-stricken areas in the west. Harry C. Barron, chairman and counsel of the Executive Committee of the Western Traffic Association, said the Western railroads' contribution to the drought relief program of 1953 and early 1954 totaled in excess of $20 million. He told Secretary Benson that Western lines had experienced a drop of nearly one-third in net railway operating income for the first six months of this year as compared to the same period last year.

A further drop in revenue, he said, "could prove extremely embarrassing to many of our major lines." He added that the Western lines' contribution to last year's relief program evidenced their concern over "the economic stability of our farmers and ranchers" but that it was necessary also "to keep our railroads in a sound financial condition."

People in the News

Lasher Becomes Army's Assistant Transport Chief

Colonel Edmund C. R. Lasher has been assigned to the office of the Army's chief of transportation as assistant chief of transportation (traffic). Colonel Lasher served with the Army's Traffic Control Branch during World War II, and he has since been transportation officer in Korea and commandant of the Transportation School at Fort Eustis, Va.

Another recent change in the office of chief of transportation was the designation of Colonel Ray L. Cox as chief of the Passenger Traffic Division.

Siedle Confirmed for Postal Transport Job

The Senate on August 16 confirmed President Eisenhower's appointment of E. George Siedle to the position of assistant postmaster general.

Mr. Siedle will be head of the Post Office Department's Bureau of Transportation, succeeding John C. Allen (*Railway Age*, August 16, page 9).

Harper Confirmed For Retirement Board

The Senate, on August 11, confirmed President Eisenhower's reappointment of Horace W. Harper to the Railroad Retirement Board for a new five-year term beginning August 29. Mr. Harper is railroad labor's representative on the board.

Donald Conn Dies

Donald D. Conn, executive vice-president of the Transportation Association of America, died at Chicago August 13, of arterial sclerosis cerebral thrombosis.

Born May 24, 1894, and graduated from the University of Michigan in 1913, Mr. Conn founded the TAA in 1935 for the purpose of obtaining agreement between all interested groups for solution, on economic grounds, of the country's transportation problems. He had served continuously since the association's founding as its executive vice-president, and, at various times, as one of its directors.

Prior to his establishment of TAA, Mr. Conn was chief of the Transportation Division of the Joint Commission of Congress in 1921-1922; federal fuel administrator during the national coal strike from June to October 1923; manager of the Car Service Division of the American Railway Association (now Association of American Railroads) from 1923 to 1927; and managing director of the Associated Deciduous Growers of California from 1927 to 1934. As manager of the CSD, he was instrumental in organizing the regional shippers' advisory boards.

TAA "Must Continue"—The board of governors of the TAA issued this statement August 18:

"Transportation Association of America has suffered a severe loss in the untimely death of Donald D. Conn. His guidance, his dynamic leadership, his devotion and his enthusiasm have enabled the association to achieve its present stature. He will be sadly missed.

"We are recommending to the board

of directors that it proceed without delay to select a worthy successor to Mr. Conn. In the meantime, we are instructing the present staff, under direction of Leif Gilstad, first vice-president, to carry on the association's activities in all respects.

"It is our conviction that the association fills a real need in coordinating efforts of various groups in behalf of sound transportation under private management. Supported and aided by business leaders of all kinds and by all forms of transportation, it must continue to represent the national public interest."

Labor & Wages

Board Gives BLE "Trainman Package"

Arbitrators recommend same wage settlement already accepted by other operating employees

In a 4-to-2 decision, made public at New York August 13, the six-man arbitration board which, since last April, has been considering wage demands of the Brotherhood of Locomotive Engineers, recommended that members of that craft be given the same settlement previously agreed to by other operating unions.

This settlement—frequently referred to as the "trainman package" because the Brotherhood of Railroad Trainmen was the first to accept it—calls for an increase of five cents per hour in basic wage rates; inclusion in those basic rates of increases of 13 cents per hour granted under so-called escalator clauses of previous wage contracts; and a third week's vacation, with pay, for men with 15 or more years of service.

In the engineers' case, the wage settlement would be retroactive to December 16, 1953, and the vacation clause to January 1, 1954. "Where elapse of time during this proceeding has made it impracticable to afford a third week's vacation to an employee qualified therefor," such employee shall be paid for such third week; and payment in lieu of vacation shall be made to the widow of any qualified employee who, in the year of his death, may not have received his vacation or payment therefor.

The arbitration proceeding which resulted in the foregoing rulings grew out of the engineers' demand, originally made last year, for a 30% wage increase, subsequently reduced to 22½%. Those increases were necessary, the BLE contended, to restore the "differentials" which once existed between the pay of enginemen and "lesser skilled employees," but which the union says have been largely wiped out by flat percentage increases awarded to all railroad employees in recent years.

"Kills" Arbitration?—The board's ruling was bitterly assailed on that ground by Grand Chief Engineer Guy L. Brown, who termed it the "most flagrant violation of moral justice I have ever witnessed in more than 40 years of railroading." The ruling "kills for all future purposes," Mr. Brown added, the settlement of railroad wage disputes by arbitration.

The board was established by voluntary agreement of the carriers and the brotherhood last March 25, after direct negotiations had failed to effect a settlement of the union's demands. Its members were: For the railroads—Daniel P. Loomis, chairman, Association of Western Railways, and J. W. Oram, assistant vice-president, Pennsylvania; for the BLE—Thomas J. Harkins and Donald S. Beattie; and neutral members—Dr. Archibald Cox, professor of law and labor relations at Harvard University, and Dr. Richard A. Lester, professor of economics at Princeton University. It was the brotherhood representatives who cast the dissenting votes.

Yardmasters Settle—The Railroad Yardmasters of America have also accepted, for their approximately 4,000 members on 55 railroads, the same retroactive five-cent increase, three-week vacation settlement previously reached with trainmen, conductors, firemen, switchmen and dispatchers. The yardmasters' agreement was reached at Chicago on August 12.

However, the union's original demand for a 45% pay increase to regain "traditionally equal footing with dispatchers," will probably be reinstated in the not-too-distant future. Delegates to the organization's 26th general assembly, held in Oakland, Cal., early this month, voted unanimously to reaffirm this demand. The organization had also sought changes in the rest day rule to provide two rest days instead of one.

Milton G. Schoch, president of the yardmasters since 1943, was reelected, as was Secretary-Treasurer W. F. Meyer.

. . . **The first of two** heavy-duty, diesel-electric tug boats being constructed for the Pennsylvania by the R.T.C. Shipbuilding Corporation, Camden, N.J., was launched August 16. About two months will be required to complete outfitting.

Supply Trade

Charles M. Wheeler, vice-president, railway signal sales, **Union Switch & Signal Division** of **Westinghouse Air Brake Company,** will retire from active service September 1, but will continue in a consulting capacity. **Joseph K. Mickley,** manager of the Chicago district office, will become general sales manager of the railway signal sales department, at Swissvale, Pa. He will be succeeded at Chicago by **John W. Hansen,** assistant to Mr. Wheeler on sales and administration.

Joseph K. Mickley

General American Transportation Corporation has announced execution of a contract for acquisition of the **Fuller Company,** Catasauqua, Pa., manufacturers of pneumatic conveying systems for dry bulk materials handling. The Fuller Company will continue to operate as an independent corporation, with its engineering and manufacturing operations continuing in its present offices and shops.

L. Jack Clarke, manager of the New York sales district of Leschen Wire Rope division, **H. K. Porter Company,** has been appointed general sales manager, at St. Louis.

Floyd T. Ridley has become associated with the **Republic Tank Car Company** as director of operations.

OBITUARY

Charles A. Crane, 73, a former engineering chief of Templeton, Kenly & Co., died July 21.

Owen C. Heckart, sales representative of the Cardwell Westinghouse Company, died recently.

Merle J. Trees, chairman of the board of the Chicago Bridge & Iron Co. and former president of the National Railway Appliance Association, died August 6 at Chicago.

Figures of the Week

Freight Car Loadings

Loadings of revenue freight in the week ended August 14 totaled 685,277 cars, the Association of American Railroads announced on August 19. This was an increase of 17,685 cars, or 2.6%, compared with the previous week; a decrease of 122,345 cars, or 15.1%, compared with the corresponding week last year; and a decrease of 120,479 cars, or 15%, compared with the equivalent 1952 week.

Loadings of revenue freight for the week ended August 7 totaled 667,592 cars; the summary compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CAR LOADINGS

For the week ended Saturday, August 7

District	1954	1953	1952
Eastern	105,920	132,758	124,118
Allegheny	119,597	157,188	153,589
Pocahontas	46,652	59,437	57,085
Southern	112,527	121,515	120,599
Northwestern	115,967	136,750	146,325
Central Western	113,023	119,501	120,207
Southwestern	53,906	58,200	59,725
Total Western Districts	282,896	314,451	326,257
Total All Roads	667,592	785,349	781,648
Commodities:			
Grain and grain products	51,383	49,210	54,089
Livestock	6,504	6,410	7,208
Coal	105,026	132,682	138,328
Coke	6,772	13,093	10,722
Forest products	38,277	47,580	46,672
Ore	66,781	91,862	92,819
Merchandise l.c.l.	62,049	68,943	71,930
Miscellaneous	330,800	375,569	359,880
August 7	667,592	785,349	781,648
July 31	683,569	793,754	733,076
July 24	684,287	780,699	607,190
July 17	694,545	791,414	609,000
July 10	569,562	721,454	572,362
Cumulative total, 33 weeks	20,279,195	23,469,675	22,286,717

Organizations

The 30th convention of the **Brotherhood of Railroad Trainmen** will be held in Miami Beach, Fla., beginning August 30, "to chart the union's policies for the next four years." President W. P. Kennedy has indicated that, in addition to political and economic subjects of general interest, delegates would set policies regarding the BRT's insurance program, railroad retirement and unemployment compensation, and safety legislation.

Perishable freight traffic will be the subject of discussion at the meeting of the **Pacific Railway Club** on August 26, at the Mart Club, San Francisco. K. V. Plummer, vice-president and general manager, Pacific Fruit Express Company, will speak on the "Outlook for Mechanical Refrigeration on the Railroads from the Standpoint of an Operating Man." Palmer Mendelson, of Mendelson-Zeller Company, will represent shippers.

Competitive Transport

Study Ordered on "Barriers" to Truckers

The House Committee on Interstate and Foreign Commerce has ordered its staff to make a study of "barriers to the free flow of interstate commerce on the highways which result when a state refuses to grant reciprocal exemption from state taxes and fees to out-of-state trucks.

The study was ordered following committee consideration of H. Res. 407 which called for an investigation by the committee itself.

The resolution was introduced by Congressman William H. Ayres, Republican of Ohio.

Abandonments

Abandoned Lines Revived By ICC Service Orders

The Interstate Commerce Commission has made unusual use of its car service powers, in recent issuance of service orders designed to keep abandoned railroad lines in operation.

Service Order No. 898, effective August 11, authorizes the Chicago, Rock Island & Pacific to operate over approximately 39 miles of line which the Wichita Falls & Southern has abandoned, between Graham, Tex., and South Hanlon (Breckenridge). Pending before the commission is a Rock Island application for authority to purchase the line, so the service order is, in effect, a temporary operating authority.

The RI had originally proposed to operate experimentally, for a three-year period, a 106-mile segment of the WF&S between Wichita Falls, Tex., Graham, and South Hanlon, but conditions laid down by the ICC in connection with this proposed test *(Railway Age*, June 28, page 24) led to further study, which resulted in a modified plan for outright purchase of the 39-mile Graham-South Hanlon section over which SO No. 898 now gives the RI temporary operating rights.

Service Order No. 899, effective August 12, directs the Norfolk Southern to restore service on its 6.2-mile line between Plainview, N.C., and Ellerbee. The line was abandoned pursuant to a commission authorization *(Railway Age*, July 27, page 60), but the commission subsequently postponed the effective date of the abandonment certificate. The postponement was to allow time for court consideration of an application for an injunction against the commission order which has been filed by the North Carolina Utilities Commission.

Authorizations

COLORADO & SOUTHERN.—To abandon its Waverly branch, 4.7 miles, between Wellington, Colo., and Waverly.

MANISTEE & NORTHEASTERN.—To abandon an 8.6-mile branch from Hatch's Crossing, Mich., to a point one mile north of Cedar City.

NEW YORK CENTRAL.—To abandon 1.1 miles of its line between Franklin, Pa., and Oil City.

NEW YORK CENTRAL.—To abandon its 15.9-mile branch from a junction with its main line at Palos, Ohio, to Lathrop.

NORFOLK & WESTERN.—To abandon its 1.4-mile branch from Chattaroy, W. Va., to Howard.

WESTERN MARYLAND.—To abandon a 0.8 mile segment of main and side track between Westernport, Md., and Piedmont, W. Va. This is the last of six segments of the line's Cumberland & Pennsylvania branch to be abandoned under an application filed September 30, 1953.

Equipment & Supplies

FREIGHT CARS

1,801 Freight Cars Delivered in July

New freight cars delivered in July numbered only 1,801, compared with 2,650 in June and 6,370 in July 1953, the American Railway Car Institute and the Association of American Railroads have announced jointly.

Orders for 883 freight cars were placed in July, the announcement added; and the backlog of cars on order and undelivered on August 1 totaled 12,889, compared with 13,860 on July 1. A breakdown by types of cars ordered and delivered in July, and of cars on order as of August 1, follows:

Type	Ordered July '54	Delivered July '54	On order Aug. 1, '54
Box—Plain	0	622	5,284
Box—Auto	0	0	1,000
Flat	0	224	419
Gondola	34	81	93
Hopper	0	107	534
Covered hopper	95	26	719
Refrigerator	700	298	3,227
Tank	54	306	1,419
Caboose	0	3	70
Other	0	134	124
TOTAL	883	1,801	12,889
Car builders	508	705	4,568
Railroad shops	375	1,096	8,321

The **Gulf, Mobile & Ohio** has been authorized by its directors to build 100 50-ton pulpwood cars. Date and place of construction have not yet been determined.

The **North American Car Corporation** has ordered 10 70-ton phosphate cars from the Thrall Car Manufacturing Company.

The **Texas Natural Transportation Company** has arranged with the Mutual Life Insurance Company of New York for financing of $1,450,000 to provide part of the purchase price of 150 special tank cars, to be built by the General American Transportation Corporation, and used to distribute LP gas in Florida, Georgia and North and South Carolina. Texas Natural Transportation is a subsidiary of Texas

HOW THE ARCATA & MAD RIVER SAVES $6000 A YEAR IN FUEL COSTS WITH TWO CAT*-POWERED 44-TONNERS

There are a number of profit-building reasons why The Arcata & Mad River Railroad Co., Korbel, Calif., replaced steam locomotives with two 44-tonners each powered by a pair of Caterpillar D17000 Railroad Engines. They all add up to black in the ledger book.

For instance, fuel savings alone amount to $19.06 a day, or about $6000 annually.

"And," adds R. V. Nicholas, resident manager, "maintenance and inspection costs will also produce a considerable saving."

This 7½-mile road hauls lumber, logs and freight for lumber companies from Korbel to the Northwestern Pacific Railroad near Arcata. Over a roadbed which includes 32-degree curves, it hauls as many as 29 cars at a time. Annually it hauls 7340 cars, adding up to 183,500,000 board feet of lumber.

This was a demanding test for any diesel. In selecting diesels for the locomotives, The Arcata & Mad River remembered the performance of its seven powerful Caterpillar Diesel D8 Tractors. As Mr. Nicholas reports:

"We've had no trouble with Cat Engines and are highly pleased with their dependable performance."

"Dependability" is another word for availability. With Caterpillar Diesels you can be sure equipment is ready to roll when you are. Not only is long life built into them, but a nation-wide system of dealer stores makes parts available to you in a few hours.

Is it any wonder that over 90 per cent of the 44-tonners in use on Class I, II and III railroads are powered by Cat Railroad Diesels?

Specify Caterpillar Railroad Diesels when you buy new equipment or repower. Leading manufacturers can supply them with their locomotives and other railroad equipment.

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

CATERPILLAR*

*Both Cat and Caterpillar are registered trademarks—®

FOR HIGH-PROFIT PERFORMANCE SPECIFY CAT RAILROAD DIESELS

Natural Gasoline Corporation, Tulsa, Okla.

LOCOMOTIVES

The **New York Central** has contracted with the General Electric Company to convert 20 electric locomotives, formerly used in the Cleveland Union Terminal on 3,000 volts dc, to 600-volt dc operation for service between Grand Central Terminal, New York, and Harmon, N.Y., and North White Plains. The work, which is to be done at GE's Locomotive and Car Equipment plant at Erie, Pa., includes complete overhaul of all locomotives; installation of new electric propulsion and control equipment to make each of them capable of working at 4,670 hp on an hourly basis; mechanical reconditioning and repainting. The locomotives were released from service at Cleveland when that terminal was changed to diesel operation last year (*Railway Age*, November 30, 1953, page 14); the decision to convert them for New York service was based on performance and maintenance results of a similar Cleveland Union Terminal locomotive similarly converted in 1951.

PASSENGER CARS

The **Long Island** has been authorized by its new board of directors to purchase from the Budd Company two rail-diesel cars (RDCs) at a cost of $170,000 each, for use on the eastern part of its Montauk branch.

Securities

Authorizations

NEW YORK, NEW HAVEN & HARTFORD.—To assume liability for $6,180,000 of equipment trust certificates, Series B, the second and final installment of a $12,780,000 issue to finance in part 100 passenger-train cars costing an estimated $17,040,000, as follows:

	Description and Builder	Estimated Unit Cost
89	multiple-unit passenger coaches (Pullman-Standard Car Manufacturing Company)	$169,275
7	multiple-unit combination passenger-baggage cars (Pullman-Standard)	$173,800
3	multiple-unit club cars (Pullman-Standard)	$188,175
1	multiple-unit buffet club car (Pullman-Standard)	$193,400

The original application (*Railway Age*, November 30, 1953, page 77) estimated that all these unit costs would be higher and that total cost of the equipment would be $17,600,000. It proposed issuance of $13,200,000 of certificates in two equal series. Division 4 reported, however, that an escalation clause in the purchase contract did not produce expected increases, thus permitting reduction in the issue.

Division 4 approved sale of the second installment for 98.38% based on an interest rate of 3%—the bid of Salomon Bros. & Hutzler and three associates—which will make the annual cost of the proceeds to the road 3.28%. The certificates, dated January 1, 1954, will mature in 15 equal annual installments of $412,000, beginning January 1, 1955. The certificates were reoffered to the public at prices yielding from 1.75 to 3.25%, according to maturity.

WESTERN PACIFIC.—Subject to authorization by the ICC of the issue itself, the commission has ruled that sale by this road of $22,500,000 of 30-year, 5% income debenture bonds (*Railway Age*, March 15, page 74) need not be by competitive bidding.

Dividends Declared

ATLANTA & CHARLOTTE AIR LINE.—$4.50, semiannual, payable September 1 to holders of record August 20.

DELAWARE & BOUND BROOK.—50¢, quarterly, payable August 20 to holders of record August 13.

DENVER & RIO GRANDE WESTERN.—$1.25, quarterly, payable September 20 to holders of record September 10.

FORT WAYNE & JACKSON.—5½% preferred, $2.75, semiannual, payable September 2 to holders of record August 19.

NORFOLK SOUTHERN.—30¢, reduced, payable September 15 to holders of record September 1.

PHILADELPHIA, GERMANTOWN & NORRISTOWN.—$1.50, quarterly, payable September 4 to holders of record August 20.

RUTLAND & WHITEHALL.—$1, quarterly, payable August 15 and November 15, to holders of record July 31 and November 1, respectively.

VIRGINIAN.—common, 62½¢, quarterly, payable September 15 to holders of record September 1; 6% preferred, 37½¢, quarterly, payable November 1, 1954, and February 1, May 2 and August 1, 1955, to holders of record October 19, 1954, and January 15, April 18 and July 15, 1955, respectively.

Security Price Averages

	Aug. 17	Prev. Week	Last Year
Average price of 20 representative railway stocks	71.86	70.37	63.11
Average price of 20 representative railway bonds	97.02	96.49	90.66

Railway Officers

George B. Hanson Succeeds O. A. Smith on SP-PE

George B. Hanson, passenger traffic manager of the Southern Pacific at Los Angeles, will succeed O. A. Smith as assistant to president of SP and

George B. Hanson

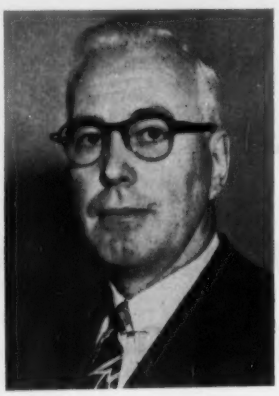
as president of the subsidiary Pacific Electric, effective October 1, when Mr. Smith will retire after 47 years of service.

ASSOCIATION OF AMERICAN RAILROADS. — **Brigadier General Lacey V. Murrow** has resigned as executive director, competitive transportation research. **E. R. Feldman,** who has been assistant director, is now acting director.

BOSTON & MAINE — MAINE CENTRAL. — **Clifford A. Somerville,** editor of the B&M employees magazaine, has been appointed publicity manager at Boston, succeeding **George H. Hill,** who has resigned. Mr. Hill will continue as publicity and advertising manager of the MC at Portland, and will devote part of his time to publicity and advertising accounts, acting as a consultant, and making sound and color motion pictures for industrial and recreational groups throughout New England.

Richard M. Aylward, advertising agent of the B&M, has been named advertising manager.

Mr. Somerville is president of the American Railway Magazine Editors Association, chairman of the Boston Business-Industrial Section of the National Science Teachers Association,



Clifford A. Somerville

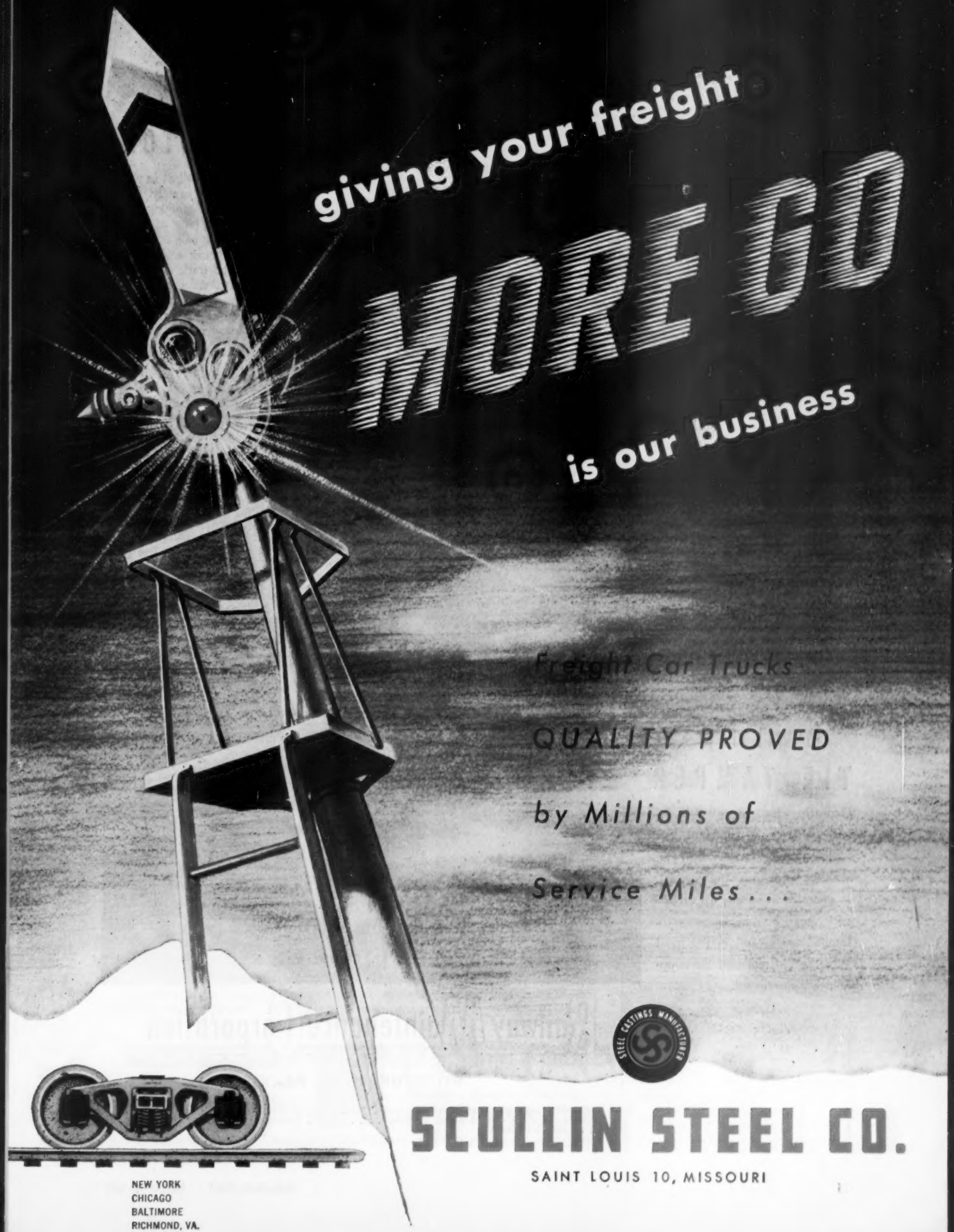
and chairman of the Railroad Community Committee of Greater Boston, a public relations arm of the Eastern Railroad Presidents Conference.

Carlton F. Heard has been appointed freight traffic manager of the B&M and MC at Boston, succeeding **James R. MacAnanny,** who will retire August 31, after almost 50 years of service. The position of assistant general traffic manager of the B&M, formerly held by Mr. Heard, has been abolished. **John M. Shaw** has been appointed assistant general freight agent of both roads at Boston, effective September 1.

OBITUARY

Charles A. F. Ziemer, retired head of the car department of the Belt Railway of Chicago, died August 11 in that city.

A. B. Enderle, assistant to general manager of the Santa Fe at Los Angeles, died July 31 in that city.


giving your freight
MORE GO
is our business
Freight Car Trucks
QUALITY PROVED
by Millions of
Service Miles . . .
STEEL CASTINGS MANUFACTURER
SCULLIN STEEL CO.
SAINT LOUIS 10, MISSOURI
NEW YORK
CHICAGO
BALTIMORE
RICHMOND, VA.
CLEVELAND

McWILLIAMS

BALLAST DISTRIBUTOR

This machine places ballast in the desired quantity in exactly the proper place for tie tamping. In service it replaces a crew of from 30 to 40 men forking ballast, doing the job faster, better and more economically. The track ahead of the Ballast Distributor always is clear for renewing and replacing ties. Machine will also dress shoulder and intertrack.

McWilliams Equipment

Does the job BETTER ...with fewer men!

McWILLIAMS

TIE TAMPER

Operating by controlled pressure, this unit compacts the ballast firmly under the rail without crushing the ballast. It operates at speeds up to 620 feet per hour of perfectly tamped track, and is the most versatile and efficient tie tamper every developed.

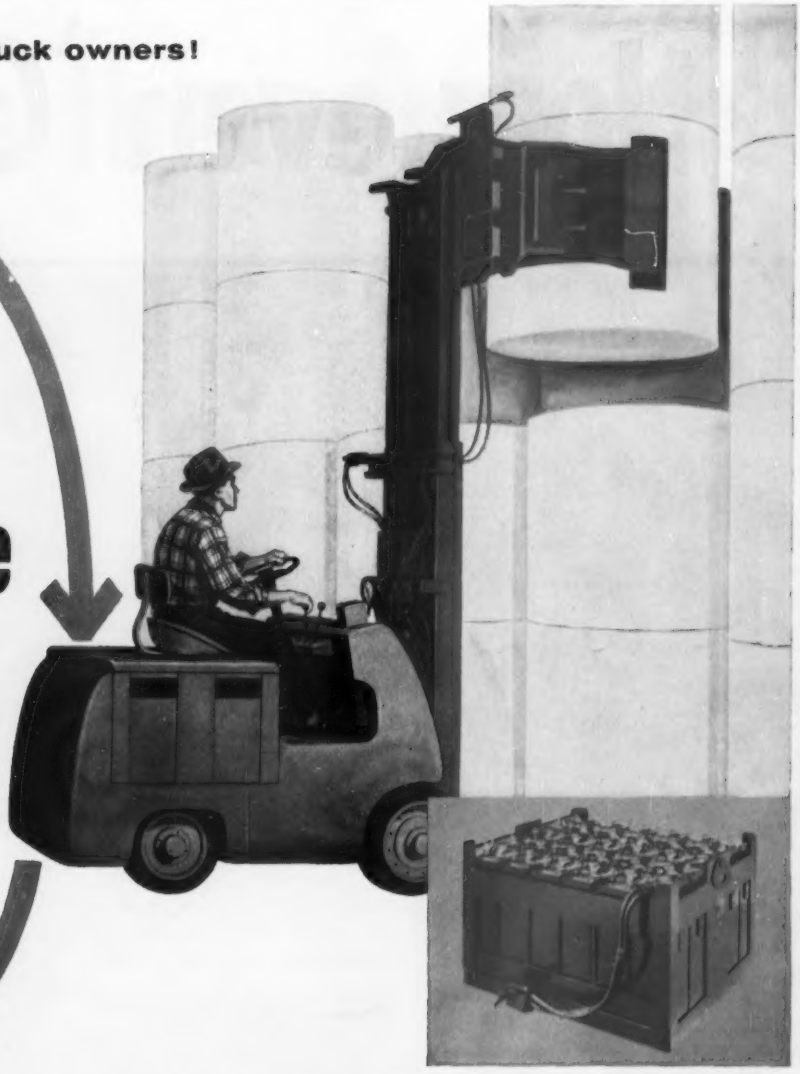
Railway Maintenance Corporation

PITTSBURGH 30, PA.

DESIGNERS AND MANUFACTURERS OF: McWILLIAMS MOLE, SUPER MOLE . . . McWILLIAMS TIE TAMPER, CRIB CLEANER, BALLAST DISTRIBUTOR . . . R.M.C. TIEMASTER . . . R.M.C. LINEMASTER . . . R.M.C. SPIKEMASTER

news for industrial truck owners!

Now... 25% more capacity here



. . . with the New EDISON "MC" type Battery!

Specifically designed to provide more power for modern driver-ride, sit-down fork trucks, this newest EDISON battery development provides *25% more capacity* than ever before available in nickel-iron-alkaline batteries . . . to suit the limited battery compartments of such industrial trucks. Extra power too, for operating various hydraulic devices which speed handling in plants and warehouses.

Besides this unusual space-capacity ratio, the new "MC" offers all of the profitable features that are typical of EDISON Nickel-Iron-Alkaline Storage Batteries: steel plates and cell containers for the most rugged, long-life service—electrical characteristics that assure foolproof operation and outstanding dependability.

And like all EDISON batteries, the new "MC" is designed and built to give *more than twice the performance life* of other type batteries. Be sure to investigate this new EDISON development today!

If you operate battery electric industrial trucks, or are planning to purchase one soon, be sure to have the complete facts on the new EDISON "MC" type battery. Clip the coupon below and mail it today.

Edison Storage Battery Division
Thomas A. Edison, Incorporated
511 Lakeside Avenue
West Orange, N. J.

I'm interested in the new MC battery—

☐ Send me complete literature

☐ Have your representative call

NAME_____

TITLE_____

COMPANY_____

ADDRESS_____

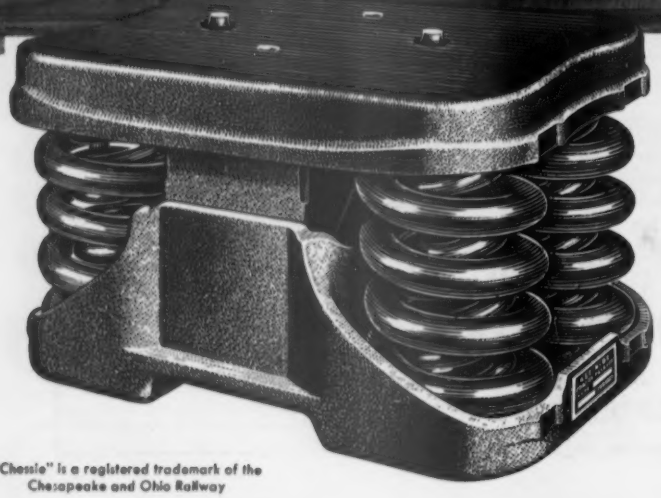
Most dependable power... lowest over-all cost you get both with an EDISON

EDISON
Nickel · Iron · Alkaline
STORAGE BATTERIES

EDISON ALSO MAKES THE FAMOUS "V.P." VOICEWRITER AND THE TELEVOICE SYSTEM

On the Chesapeake and Ohio, 6000 older cars are being equipped with ASF Ride-Control® Packages . . . so that

Now even "Chessie"®



"Chessie" is a registered trademark of the Chesapeake and Ohio Railway

The C&O is on record as being ". . . vitally interested in any plan that will move more goods, more efficiently." They found one answer in the self-contained, easy-to-install Ride-Control Package. In minutes, the Package-equipped car is ready to roll—almost as smoothly as a brand-new car on Ride-Control Trucks!

TEST RUNS—BEFORE AND AFTER PACKAGE INSTALLATION—SPEAK FOR THEMSELVES!

Same car equipped with Ride-Control Packages. Speed: 84 mph.

can ride their freights!

"Chessie" has long been a symbol of smooth, safe travel on crack C&O passenger fleets. Today, more than ever before, the same applies to their freight service.

Current modernization on the C&O calls for bringing some 6000 older cars up to modern riding standards with ASF Ride-Control Packages. Result: *cars that ride over fifteen times more smoothly!*

But aside from the obvious mechanical advantages is the equally important question of *economics.*

In deciding to use Packages extensively, the C&O considered the fact that a car available only for restricted use represents a potential revenue loss . . . that a more efficient car pool is the answer to carrying more freight per dollar invested in rolling stock . . . that safer hauls at higher speeds build traffic.

Not *all* older cars are equipped with Packages, of course. Some are so close to retirement that they don't justify even this small an investment. So each older car is evaluated as to its over-all condition. In short, the C&O Package program is sound economics in *practice* as well as in theory.

Would a similar program be practical on your road? *The facts prove that it's worth investigating.* Now is the time to find out why a small per-car investment in Ride-Control Packages can pay you big returns!

Bring your older cars up to modern riding standards . . . with

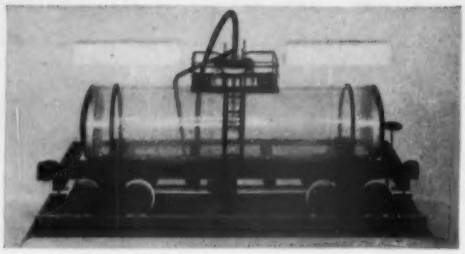
ASF Ride-Control® Packages

AMERICAN STEEL FOUNDRIES

410 N. Michigan Avenue, Chicago 11, Illinois

Canadian Sales: International Equipment Co., Ltd., Montreal 1, Quebec

NEW OAKITE FOGGING UNIT slashes hours off tank car cleaning time



Model Tank Car

Transparent body of this model tank car gives you a pretty good idea of how the Oakite Fogging Unit operates. Here it is shown, in position, reaching every inch of soiled surface with a detergent-saturated steam fog. Soils quickly loosen, oils melt. Grime slides to tank car bottom for easy drain off.

Railroad men tell us—this new OAKITE FOGGING UNIT has manual cleaning of tank car interiors "beat a mile". They say it saves money. It should—it's a *mechanical* method. Does away with costly hand scraping and wiping. Speeds tank car turnaround. Removes moderate soils and oils in a fraction of the time required by old fashioned "muscle" methods. Unit is simple to install and maintain. It's light and easy to handle, and it's economical to operate.

The OAKITE FOGGING UNIT consists of two opposing spray nozzles mounted at the business end of a 4½ foot twin tube assembly. It is inserted into tank car through dome. Its 18 inch diameter dome plate is secured by clamps. Steam and suitable Oakite Cleaner are fed to nozzles. With steam and solution valves open and car drains closed, nozzles "let go" with a detergent-saturated steam fog. This fog blankets every inch of soiled surface. Soils lose their grip, oils melt and residues slide to tank car bottom. High pressure rinse with Unit completes the job.

The OAKITE FOGGING UNIT may be rented at a nominal fee to users of Oakite Cleaning Compounds. For particulars drop a line to Oakite Products, Inc., 46 Rector St., New York 6, N. Y.

OAKITE PRODUCTS, INC., 46 Rector Street, NEW YORK 6, N. Y.
In Canada: Oakite Products of Canada, Ltd. 65 Front St. East, Toronto, Ont.

OAKITE

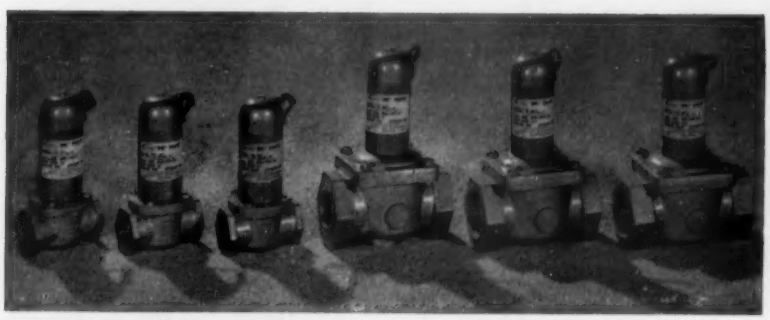
RAILWAY DIVISION

What's New in Products

Snow-Free Steps

Commuters using the Pennsylvania's Suburban Station in Philadelphia, Pa., next winter will find the steps of both the 16th and 17th street entrances free of ice and snow at all times, regardless of the weather. There will be no shoveling of snow to keep the steps clear, either, because as the picture shows, the railroad is installing electric heating cable, manufactured by the General Electric Company, Bridgeport 2, Conn., in the concrete steps. When this cable is energized, it warms up and melts snow and ice falling on the steps.

According to the Harry F. Ortlip Company, designers of the installation, electric heating cable of this type is much more effective than the old-fashioned snow shovel which it replaces. Without the heating cable installation, railroad forces would probably have to shovel snow off the steps several times during one storm, because of the hazards involved in letting the snow remain until the storm has subsided. The heating cable doesn't let the snow accumulate •



Fluid Control Valves

The Eclipse Fuel Engineering Company, Rockford, Ill., is now producing diaphragm-operated solenoid valves for the control of air, water, oil, refrigerants, propane and butane fuel gases, and sulphur dioxide gas. They will operate on line pressures as high as 150 psi and as low as ½ in. of water. The ideal cycling range for the valves is between 40 and 60 cycles per minute.

The valves are supplied with aluminum bodies for gas and air service and brass bodies for oil and water service. Valve seats and armature pilot plungers are stainless steel. The $^{3}/_{8}$-in. through $^{3}/_{4}$-in. sizes are Factory Mutual approved to maximum 15 psi pressures.

Operating advantages claimed for the valves include low power consumption, simplicity of construction, noiseless operation, coil interchangeability, high operating efficiency, wide choice of control, maximum shut-off safety and ease of maintenance.

Stock coils are rated at 7 watts maximum. They are available for 115 and 230 volts, in either 50 or 60 cycles. Coils for other voltages and cycles can be furnished to order. The valves have only two moving parts—the solenoid plunger and the synthetic rubber diaphragm. Several conventional parts such as valve guards, seat ring gaskets, pilot valve-cages and coil retaining screws, washers and springs have been eliminated •

Caboose Heater Runs on Diesel Fuel

A caboose heater trade-named the Mo Heat by the Western Equipment Company of Minneapolis, operates on locomotive diesel fuel, kerosene, signal oil or No. 2 fuel oil. The heater has a maximum output of 60,000 Btu per hour at a consumption of approxi-

mately one-third gal of oil per hour.

The heater is 22 in. by 22 in. by 39 in. and weighs 100 lb. The unit is made of heavy gage steel with an inside finish of heat resistant aluminum and an outside finish of gray enamel. Fuel tank capacity is optional at 30 or 60 gallons.

The heater is mounted to the car by bolting through the floor. It can be taken apart for cleaning and reassembled in about a half hour •

Protective Coating

An aluminum neoprene coating designed to protect ferrous metals against atmospheric corrosion, including salt spray and fumes, has been introduced by the Chemical Coatings & Engineering Co., Darby, Pa. The applied coating designated SEACO 342, resembles aluminum metal, and can be tinted to give a wide range of colors. Color stability is said to be excellent. Application is by brush, spray or roller, and coverage is 170 sq ft a gallon at 0.002-in. thickness •

Battery-Powered Stud Welder

A portable battery unit supplying independent power for welding studs up to ½-in. base diameter is offered by KSM Products, Inc., Merchantville, N. J. This unit is recommended for stud welding where power lines are not available or lack capacity. Completely integrated and independent of power lines, except for recharging, the unit may be used to operate any electrical equipment within its power capacity.

A tap selector switch, calibrated in weld-base diameters, regulates current supply and eliminates external terminal shortcircuiting when the unit is not in use. Output terminals for connections to the control box consist of two threaded studs and wing nuts; an ammeter indicates charging current; and a circuit-breaker protects equipment from excessive charging current.

Twelve heavy-duty storage batteries of 150-amp-hr rating are kept charged, when connected to a 115-volt 60-cycle single-phase a-c source, by an integral automatic charger which test-checks open-circuit battery voltage every 10 minutes and charges when terminal voltage is below normal. Easy access to control mechanism, charger, and storage compartment for stud-welding control unit, guns, accessories, and studs is by a piano-hinged top held in full open position by a chain. The unit is available either without wheels or with a choice of steel wheels or solid or pneumatic rubber-tired wheels •

Electric Rock Drill

A new electric drilling unit employing a Bosch rock drill, powered by a lightweight, high-cycle motor, has been announced by the Homelite Corporation, Port Chester, N.Y. The brushless motor is operated from a portable Homelite generator weighing only 130 lb.

The rock drill, equipped with a Bosch pressure blower, drills blasting holes, wedge holes, split holes and anchor holes in rock, concrete or brickwork. The manufacturer reports that the tool will drill holes 18 ft deep and operates with a minimum of vibration and noise •

Synthetic Foam Rubber

A new synthetic elastomer foam called Airfoam SL which is said to be resistant to fire, and to deterioration from sunlight, oil and grease, and which will greatly extend the use and application of flexible foam products, has been introduced by the Goodyear Tire & Rubber Co., Akron, Ohio Its development was based on Chemigum SL, announced a year ago by Goodyear.

The manufacturer states that, because the chemicals used in Airfoam SL are delicately balanced and are subject to accurate control, the texture of the new foam product can be varied from that of a silky fine to a rough, coarse material to cover a wide range of applications. In addition, the synthetic composition is said to provide a product of higher compression with less weight than natural rubber latex foam and to give it inherently higher tensile strength with similar porosity. Compression of the new product can be varied from very soft to very firm.

The new synthetic foam can be fabricated much in the same manner as regular Airfoam. It can be produced in snowy white, or in any color, and is distinguished from latex foam rubber by its lustrous and sparkling appearance •

Improved Compounds For Hot Boxes

The Warren Soap Manufacturing Company, Boston, Mass., has announced an improved formula, known as "Red Label Koolax," for which the manufacturer claims the following advantages: (1) A tougher, friction reducing, lubricating film between journal and brass; (2) better heat transferring properties, resulting in quicker and greater reduction in temperature; and (3) cars treated with "Red Label Koolax" can be safely moved for longer distances with no hazard of reheating.

"Koolax" is packaged in two-stick cartons; in most cases, it is said, two sticks are sufficient for treating a hot box •

Portable Drinking Fountain

Mink-Dayton, Inc., Dayton, Ohio, has announced a new portable drinking-water fountain for crews working out-of-doors where fresh water is not obtainable. The fountain has a double-walled tank, with the stainless steel

All 3 Had A Hand In This Oil...

Socony-Vacuum worked closely with operators and builders to create lubricating oil of unsurpassed quality!

Today's Diesel locomotives, with their higher operating speeds, temperatures and pressures, present many complex problems which—experience has shown—can be solved only through cooperation of operator, builder and oil supplier. For many years now, Socony-Vacuum has been an integral part of this cooperative effort.

As a result of this experience—plus our own exhaustive field and laboratory evaluations—we now have what we believe to be the finest Diesel lubricating oil yet developed—Gargoyle D.T.E. 4DR—an oil with highly effective anti-foaming action, unusually strong resistance to oxidation, exceptional detergency.

Our long experience—our proved products—are available to help solve *your* problems. Why not call us?

Railroad Lubricants

SOCONY-VACUUM

Correct Lubrication

WORLD'S GREATEST LUBRICATION KNOWLEDGE AND ENGINEERING SERVICE

SOCONY-VACUUM OIL COMPANY, INC., Railroad Division, 26 Broadway, New York 4, N. Y.

inside wall insulated from the outside wall. The tank has a capacity of 4 gal. and operates on an automatic air-pressure principle. Water flows from a hole in the top of the tank when the valve is opened by pushing a button on top of the tank. The top is removable for refilling with water and is held in place by snaps. A shoulder strap for carrying the unit, as well as spill cup and salt dispenser, are available at extra cost •

Truck-Mounted Crane

A new truck-mounted crane unit which uses a Coles superstructure on a specially designed crane-carrier chassis has been announced by Coles Cranes, Inc., Joliet, Ill. The superstructure, incorporating all the customary gas-electric features associated with Coles cranes, is designed to lift 24,000 lb at a 10-ft radius. On the new truck mount the crane is capable of speeds of 30 mph, and Coles reports that weight distribution complies with all state highway requirements. The company also is producing a truck-mounted version of its 7½-ton crane •

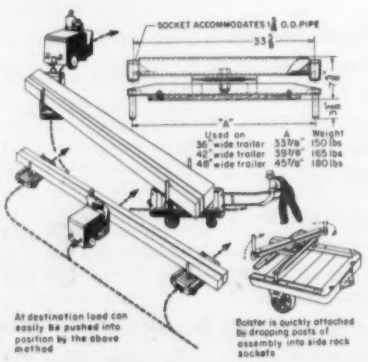
"Selectodyne" Control For Overhead Cranes

"Selectodyne" control, newly developed by the Whiting Corporation, Harvey, Ill., is said to give operators of overhead cranes greatly increased precision and smoothness in handling either light or capacity loads. Instead of the standard five speeds, the operator has 11 in each direction, any one of which he can select instantly.

Selectodyne, Whiting engineers announce, is available on all capacities of Whiting overhead cranes. Its primary appeal, however, is expected to be for the heavier tonnage cranes, where improved accuracy and fast hook action can speed repair and production jobs. Whiting cranes now using conventional controls may easily be converted to Selectodyne, which is available with an automatic load brake for extra safety •

Order Checking Truck

Order picking is said to be easier and faster because of the "cam" type center main wheel axle on a new receiving and order checking truck made by the Nutting Truck & Caster Co., Faribault, Minn. Fixed-center wheels are raised and lowered by a foot control lever. When center wheels are up, the truck rolls in any direction on its four swivel casters. The rigid-center wheels, when brought into contact with the floor, provide not only a "pivot" for turning sharp corners, but also easier steering for long-distance travel. Sizes and styles are available for specific requirements •


SOCKET ACCOMMODATES 4" O.D. PIPE
33½
"A"
Used on A Weight
36" wide trailer 33⅞" 150 lbs
42" wide trailer 39⅞" 165 lbs
48" wide trailer 45⅞" 180 lbs
At destination load can easily be pushed into position by the above method
Bolster is quickly attached by dropping posts of assembly into side rack sockets

To Facilitate Long Loads

A swivel bolster assembly has been developed by the Mercury Manufacturing Company, 4044 South Halsted st., Chicago 9, for handling loads which are too long for a single trailer, such as lumber and pipe.

This attachment consists of two identical assemblies, each of which can be easily attached to a single castor steer trailer by inserting posts into standard side stake pockets. Lengthy loads supported by bolster assemblies can be snaked through narrow doorways and around corners by pulling the lead trailer with a suitable type of power-tractor and guiding the rear trailer •

Dry Fire Extinguisher for Motors

The Ansul Chemical Company, Marinette, Wis., reports that dry chemical can be used safely on electrical motors, without danger of abrasion. Tests on its dry chemical extinguisher were conducted by Power & Mine Supply Co., Winnipeg, Man.

Equipment used in the test was a 7½-hp, 550-volt d-c open type electric motor and two 4-lb Ansul dry chemical fire extinguishers. The d-c motor was used instead of an a-c motor, because it was felt that damage would show up better in it.

While the motor was running, the contents of one 4-lb extinguisher were emptied into it through both end bells. The armature fields, commutator, brushes, brushholder and all other parts were thoroughly covered with the dry chemical—specially treated sodium bicarbonate.

According to the report of the test, the motor continued to operate without any effect whatsoever, as normal ventilation carried off the excess dry chemical.

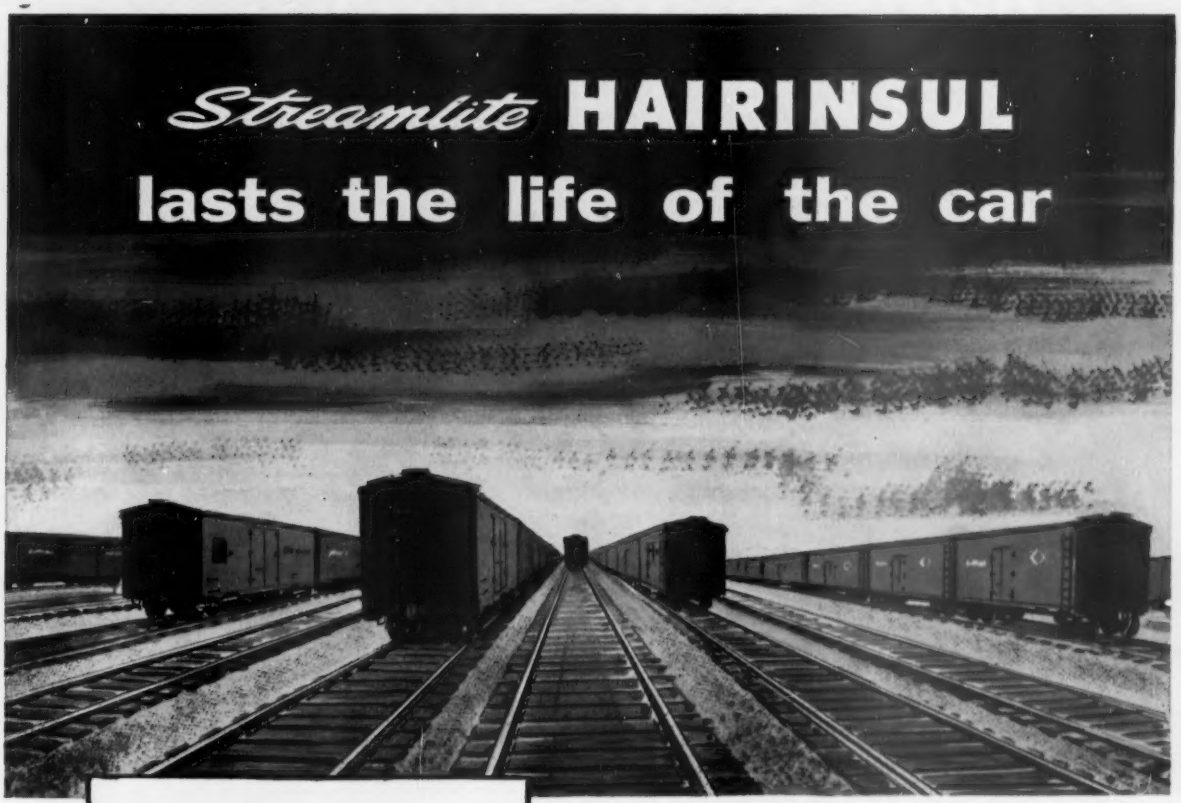
The motor was then stopped and the contents of another 4-lb extinguisher were partially discharged into the motor. This time all ventilating slots in the armature were filled, the commutator was completely covered and the brushholder packed with dry chemical.

After the motor was again put into operation, it performed as it did before the tests started.

When the motor finally was stopped, an air hose was used to blow the remaining dry chemical off and out of the motor, including the ventilating slots on the armature, fields, etc. This required about one minute.

Representatives of utility companies declared the motor would not require dismantling or overhauling, but that relubrication of the bearings would be desirable. There was no abrasive damage to the commutator. They also commented that use of an air line hose to blow the chemical out of the ventilating ducts would be sufficient servicing for ball-bearing motors. For motors using sleeve or roller bearings, it was suggested that the bearings be drained, flushed, and repiled or greased, and that the balance of the equipment be blown off •

Streamlite HAIRINSUL
lasts the life of the car



LOW CONDUCTIVITY... Thoroughly washed and sterilized, all-hair heat barrier. Rated conductivity —.25 btu per square foot, per hour, per degree F., per inch thick.

LIGHT WEIGHT... Advanced processing methods reduce weight of STREAMLITE HAIRINSUL by 40%.

PERMANENT... Does not disintegrate when wet, resists absorption. Will not shake down, is fire-resistant and odorless.

EASY TO INSTALL... Blankets may be applied to car wall in one piece, from sill to plate and from one side door to the other. Self-supporting in wall sections between fasteners.

COMPLETE RANGE... STREAMLITE HAIRINSUL is available ½" to 4" thick, up to 127" wide. Stitched on 5" or 10" centers between two layers of reinforced asphalt laminated paper. Other weights and facings available.

HIGH SALVAGE VALUE... The all-hair content does not deteriorate with age; therefore has high salvage value. No other type of insulation offers a comparable saving.

...and adds LIFE to your perishable cargo

When you call for STREAMLITE HAIRINSUL to be installed in new refrigerator cars you are making a wise, one-time investment because . . . it lasts the life of the car!

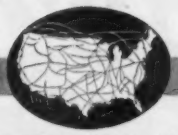
Yes . . . and you are actually adding life to valuable shipments of perishables through their safeguarded protection against sudden and extreme temperature changes with STREAMLITE HAIRINSUL . . . the dependable all-hair insulation that weighs 40% less . . . and does so much more!

More Reasons why refrigerator car builders prefer STREAMLITE HAIRINSUL are listed at left. There are many more! Write for complete data.

SETS THE STANDARD BY WHICH ALL OTHER REFRIGERATOR CAR INSULATIONS ARE JUDGED

matched men, machines and

materials build cars for the



GREAT AMERICAN RAILWAY *System*

You can see them wherever you go—the PS-1 Box Cars, PS-2 Covered Hopper Cars and the PS-3 Hopper Cars "built to serve best on the Great American Railway System.*"

Their outstanding performance is the result of car building which matches men, machines and materials.

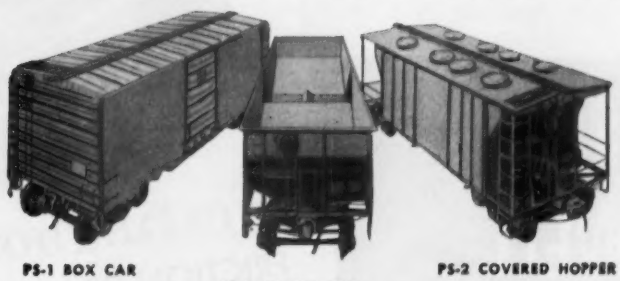
Trips through the vast Pullman-Standard freight car shops at Butler, Pa., Bessemer, Ala. and Michigan City, Ind., convince railroad executives of the unsurpassed quality and economy advantages effected by this unusual combination of production facilities.

By applying the skills of specially trained craftsmen to specific operations, better workmanship is assured. By utilizing job-designed tools, dies and jigs at each phase, more economical production is obtained. And by combining these elements with research tested materials, rugged strength, without weight penalties, is provided.

The in-service reports by Pullman-Standard field engineers prove the ability of these cars to earn more ton miles of revenue at lower cost per year of service. If you are interested in the modern trend in freight cars, write for a copy of the booklets describing the PS-1, PS-2 and PS-3.

*A typical box car moves, in one year, on 39 different roads, including two or more trips on 24 roads. (A.A.R. data)

Built to serve best on the
GREAT AMERICAN RAILWAY SYSTEM



PS-1 BOX CAR

PS-3 HOPPER CAR

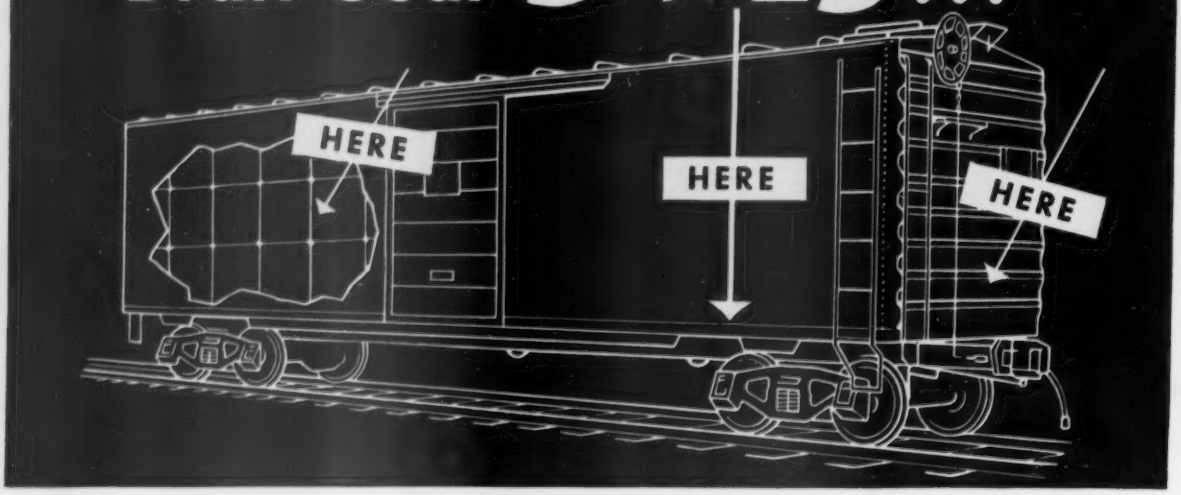
PS-2 COVERED HOPPER

YOUR NEEDS CREATE THE PULLMAN "STANDARD"

PULLMAN-STANDARD

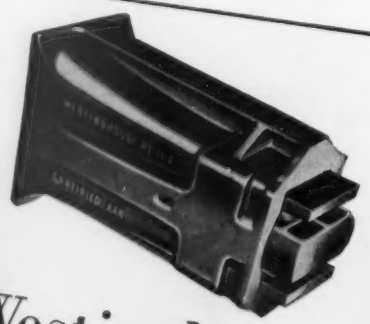
CAR MANUFACTURING COMPANY
SUBSIDIARY OF PULLMAN INCORPORATED
79 EAST ADAMS STREET, CHICAGO 3, ILLINOIS
BIRMINGHAM, PITTSBURGH, NEW YORK, SAN FRANCISCO, WASHINGTON

Where a Good Draft Gear SAVES...



...and Year after Year! Cardwell Westinghouse is in the business of saving for America's railroads. That's the whole purpose of the Westinghouse Friction Draft Gear . . . to *save* needless destruction of valuable railroad equipment . . . *save* important lading and cut unnecessary damage claims. The Westinghouse Friction Draft Gear is a sturdy, dependable piece of equipment. Research and development will always keep Cardwell Westinghouse products abreast of the needs of modern railroading.

Cardwell Westinghouse Co., Chicago
Canadian Cardwell Co. Ltd., Montreal



Specify
CARDWELL
WESTINGHOUSE

Westinghouse
FRICTION DRAFT GEAR
Type NY-11-F
Certified A.A.R.

• Cardwell Draft Gears • Westinghouse Draft Gears • Cardwell Friction Bolster Springs •

De-regulate the Regulated Or Extend Regulation?

The full text of an address, entitled "The Regulatory Process," by Commissioner Howard Freas of the ICC—delivered at a meeting of ICC practitioners in Boston on May 19—is published in the June issue of the ICC Practitioners' Journal. It is a thoughtful analysis of a problem which certainly merits from others the kind of serious and critical attention which Commissioner Freas has given to it.

Commissioner Freas says, in effect, that: Almost anybody would agree to a general statement that there ought to be less regulation of transportation than there is—but, when such discussion "gets down to cases," there is mighty little unanimity as to just what phases of regulation should be relaxed. This situation should not be surprising, but is exactly what should be expected. There never was and never will be any regulatory restriction without there being at least *some* people who benefit from it or have otherwise grown to like it—and who, consequently will oppose ending it. If memory serves, when the removal of land-grant deductions from railroad rates was under debate, there was vigorous opposition to the reform from the government clerks whose jobs were to make the computations required in applying these deductions.

Commissioner Freas believes that there are "instances of present regulation, which, though at one time necessary, are no longer vital." Among such instances he would include "safeguards against unreasonably high rates." Competition, he believes, now provides ample protection from such extortion. He is unwilling to agree, however, that the Fourth Section should be repealed; but he does concede that, under present conditions, this section no longer retains its former importance.

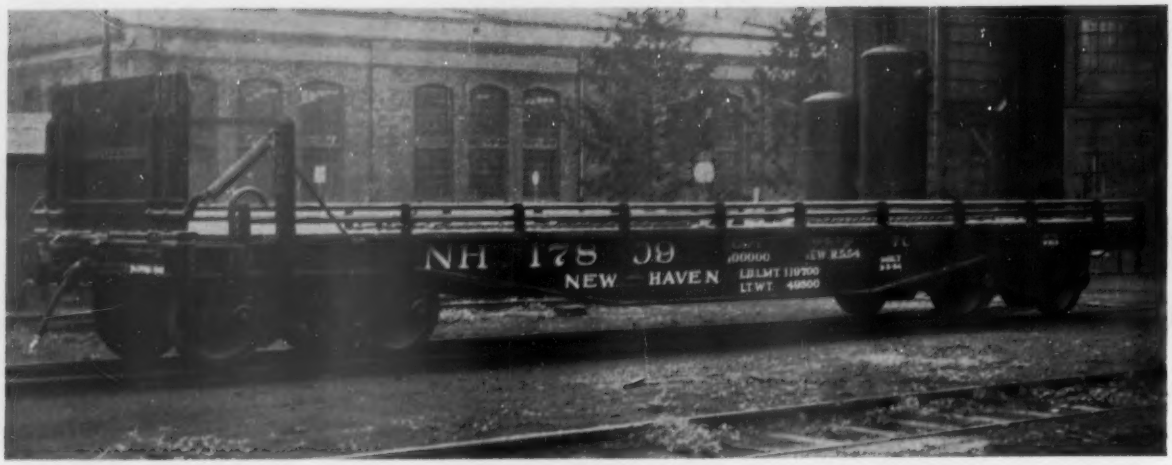
The commissioner sees clearly the problem which has arisen, under present regulation, from the fact that "certain carriers are under compulsion to furnish adequate facilities at reasonable rates for all who choose to use their services, while others without a like compulsion or restraint use public facilities to compete with them in selected tonnage." In this connection, he also mentions the practice of leasing vehicles and the case of the carrier which buys and sells the products hauled. Although the commissioner does not say so explicitly, he seems to lean toward the belief that comprehensive regulation, now applied only to common carriers, may have to be extended to the carriers now exempt.

Suppose there were to be, today, a show of hands among transportation people on the question: *Should the present alarming difficulties in competition of the true common carriers be corrected (1) by de-regulating the common carriers or (2) by extending regulation to include the commercial traffic now unregulated or regulated only in part?* Would there be any unanimity in the answer given to this question? We doubt it.

Our own opinion is that the *means* adopted for equalizing competition as between the true common carriers and their competitors is, as matters now stand, relatively unimportant. The really important consideration now is, or should be, to get as much equalization of the competition as possible, and quickly. Debate over the means to achieve that end ought not to be permitted to obscure primary attention to the main objective. We reach this conclusion with considerable reluctance—and only because of the conviction that if *some* means of equalizing competition between common carriers and the others is not soon achieved, then genuine common carrier transportation, under private ownership, may soon be largely destroyed. The choice between (1) de-regulation of the common carriers, or (2) broadening of regulatory restrictions to include carriers now exempt, ought, therefore, to be made on the basis of practicability. If it would be easier to "sell" extension of regulation than de-regulation, or vice versa, then by all means let the choice fall to the method which seems to qualified observers to be the most likely to succeed, with minimum delay.

If a man is drowning, it is imperative that he be rescued promptly. An onlooker who can swim is a better prospect for the life-saving job than one who can't. In any event, it does not make sense to spend time arguing about just who is going to do the rescuing, while the unfortunate victim is allowed to perish.

People experienced in legislative and public relations work would do a valuable service if they would quickly marshal and present the evidence as to which of these alternatives is the more immediately and certainly "saleable"—that is, as to whether effort should be concentrated on regulating the unregulated or upon de-regulating the over-regulated.



"TRAILINERS" EMBODY . . .

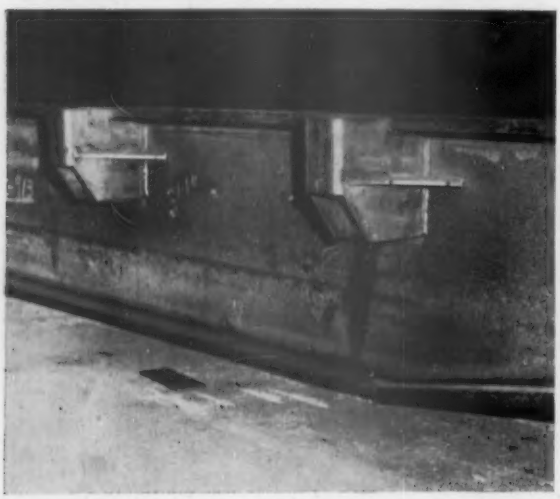
New Flat Car Design Details

- All-welded underframes
- I-beam center sills, modified
- Fish-belly side-sill girders
- Integral center plate, filler and rear draft lug

The New Haven, while not the originator of "piggyback," has been a pioneer in establishing the economy, practicability and utility of highway trailer transport with the "Trailiner" cars owned and operated by this road. After about 15 years of daily operation between major cities in its territory, over 50,000 trailers were handled by this road in 1953 in joint rail-highway movement.

While duo-trailer flat cars have been used to some extent, the service is now performed with a fleet of more than 300 single-trailer flat cars. The latest additions to this group of cars have all-welded underframes, designed and fabricated by the Railway Division, International Steel Company, Evansville, Ind., in collaboration with the mechanical staff of the New Haven.

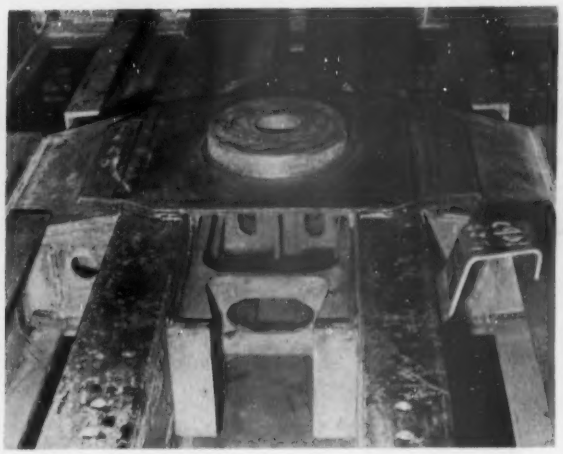
The 100 new cars, assembled at the railroad's shops at Readville, Mass., are 40 ft long, have a nominal capacity of 50 tons and light weight of 49,300 lb. To meet



FISH-BELLY SIDE SILL and stake pockets in welded steel-plate construction throughout.

UNDERFRAME END VIEW showing "skull-cap" covering draft gear pocket and integral striking casting.

COMBINED CENTER PLATE, center filler and rear draft lug casting in up-side-down position.



CENTER PLATE CASTING WELDED in place between center sills and cover plate, through which it projects.

clearance conditions on the New Haven, the car underframes are designed to give a rail-to-deck height of 41¼ in. This is accomplished by utilizing 10-in. wide-flange I-beams as center sills. The top and bottom flanges are cut away in the draft area and the height of the pocket achieved by applying a steel "skull-cap" from body bolster to end sill. The top of this plate on the finished car is flush with the decking.

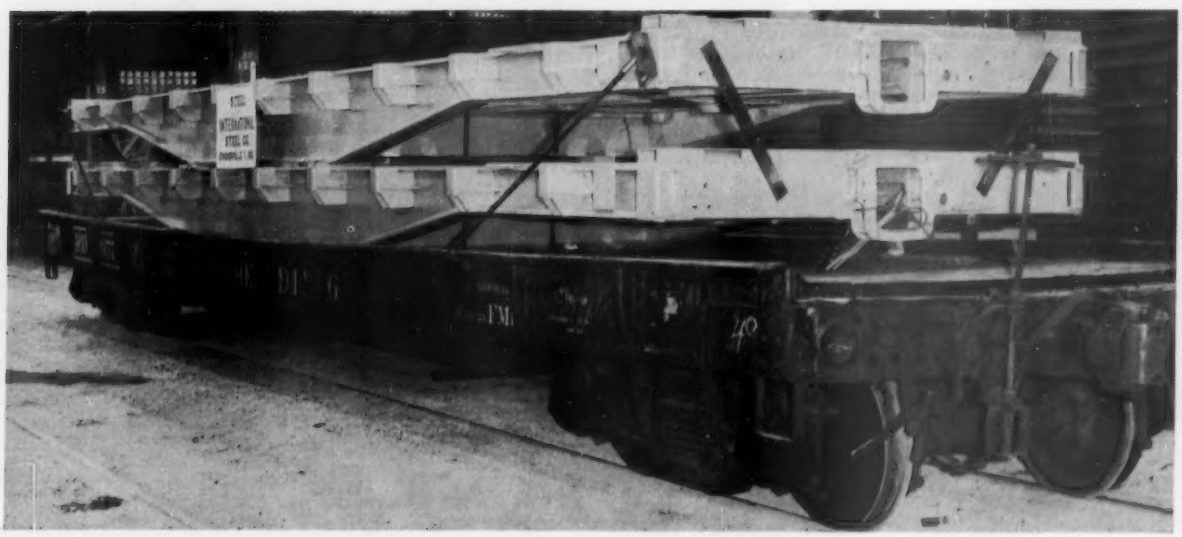
Another feature of the design is the use of International Steel's integral cast-steel center plate, center filler and rear draft lug. This development is a product of research carried on to strengthen a weak point in previous designs and thus produce stronger underframes which will more adequately meet modern requirements.

Studies of this detail have been particularly directed toward stabilizing the body bolster construction and its attachment to the center sills. With the new construction, impact forces, particularly those resulting from truck inertia in relation to the car body, are transmitted directly to the center sill structure. The body bolster is thus relieved of these destructive forces tending to turn the bolster about its transverse axis, and connections are not subjected to the high impact forces otherwise imposed.

The fish-belly side-sill girder utilizes rolled-steel plates for the top and bottom chords as well as the web, united in a single, strong unit by automatic welding. The floor system and cross-members are rolled structural shapes with connections equivalent to the effective material sections.

Achievement of the rail-to-deck height of 41¼ in. has been accomplished without change in the AAR standard truck center-plate height, or the standard coupler-draft center line. As units, completely integrated by welding, these underframes are expected to demonstrate the possibilities of welded construction in rolling stock of special design calling for an unusual degree of reliability, economy, and long, trouble-free service life.

The trucks are ASF A3 Ride-Control with 3-1/16 in. spring travel. The axles have 5½-in. by 10-in. journals, in Timken roller bearings. Waughmat twin-cushion draft gears are applied on 20 cars. The others have Waugh friction type gears. Couplers are AAR Type E.



FINISHED UNDERFRAMES are shipped from the International Steel Company's plant at Evansville, Ind.

"MANY INDUSTRIES are going to try to find plant sites in the smaller towns away from the big centers. In my opinion they will be located on railways which have an integrated system of development, real estate and taxes all under one officer."

Put These Jobs Together—

- Industrial Development
- Real Estate
- Taxes

. . . Urges "Mr. X" (Who Enjoys Such a Position)

Few experiences are more rewarding for a salesman than to work as a buyer for a time—or, for a railroad industrial development man to go out of his territory and make attempts to purchase land for a proposed industrial plant site.

On four occasions I have slipped from behind the counter and journeyed forth to assist large industries to find suitable lands in other parts of the country. Each time I have returned with new ideas . . . and have quietly dropped a lot of former theories.

But above all I have returned holding the belief that many railways err in not having one officer in charge of industrial development, real estate and taxes. I have seen roads horribly handicapped by the fact that the land commissioner "talked only with the chief engineer" while the industrial development officer acknowledged only the traffic manager as boss. To complicate it further, the tax man (ad valorem tax man, this is) generally reports to the comptroller.

Even in the annual conventions of the American Railway Development Association the real estate meetings are usually held separately from the industrial development meetings.

In a southwestern city I walked into one railway development office and outlined the type of property required by an industry looking for a new plant site. I told the development agent that time was of the essence and we would prefer to buy from the railway if possible. This agent gazed upon me in horror. "We own some land," he admitted, "but I'll have to get our real estate agent over to see if we have anything suitable."

"How about taxes—I understand you have a tough property tax situation here?"

"Taxes? Oh, taxes! I'll see if our tax commissioner can find time to give you a statement."

It should be said that long before that particular industrial agent had gathered his clan and their respective reports, we had selected another site on a railway where the development man had real estate, tax and other necessary data available at once.

In the office of a southeastern carrier, one day when we mentioned the real estate office, we were told that only leases and purchases of right-of-way were handled by that department. "The land man," the industrial agent told us disdainfully, "watches over the old valuation records and keeps up a few leases. After all, what has the real estate department to do with industrial development?"

Great Day! In my book—industrial development is 90% real estate.

On railways where real estate is something more than a back office matter, it is possible to get information about the approximate value of land at a wide range of points. This kind of information is most important for the intelligent location of a plant.

In many cases, I, as a railway development officer, have been directed by an industry client to find locations which could be purchased at—say, not more than $2,500 per acre. By knowing the "going value" we could narrow our search down to certain points. On some roads, in contrast, the industrial agent takes the position that value is not his business. "Here is some level land which can be served by our tracks," we would be told. "You will have to contact the owner and bargain with him."

Speaking of values: The railways owe thanks to the valuation work of past years for developing appraisers capable of quick analyses. The most alert real estate and industrial commissioners I have met in the business have served previously as land appraisers.

In contrast, when a railway real estate office is headed by a man without appraisal experience, the matter of values often is chaotic. We asked one agent, for example, how he determined the value used in fixing rental charges. He was surprised at our stupidity. "The government" he told us, "made a complete appraisal and we have a record of the units for each zone." He was still using the 19a Land Report—based on values found for the years 1914 to 1918!

While seeking sites on other railways, we found this generally to be true: On those roads where real estate, development and taxes are handled under one jurisdiction, it required only a few hours to examine all possible locations and select the properties which showed promise for inspection. Conversely, on the roads where control is scattered we received information in "relays"—some as late as 10 days after the inspection.

Many railways close their eyes to the advantage offered an industry by preferring a long-term lease. The rental under a lease becomes an operating expense, while the purchase money, of course, is a capital expenditure.

One manufacturer in a highly competitive line asked me to find 100 acres of land "on the edge of some Midwest town where the effective property tax* does not exceed 2%, and we prefer to lease rather than buy." When I relayed this request to one industrial agent he dismissed the subject abruptly. "There is no tax rate anywhere as low as 2%."

Meanwhile, I had found an excellent tract on this particular railway. I finally persuaded the development man to send for his tax expert. This man, of course, was able to indicate many locations with an "effective rate" of less than 2%.

On a southern road we were told by the industrial agent, "I don't know anything about real estate. You pick the town and I'll take you to the Chamber of Commerce and let them show you some plant sites." In contrast, the agent of a competing railway said, "Here is an exhibit book showing every tract owned by the railway available for sale. You can buy or lease any of these lands. If you find what you want and we can agree on price, your industry can start building tomorrow morning and the contracts will be completed in a week or so."

In this case, the plant was half-completed before the agent of the first railway furnished his list of Chamber of Commerce secretaries he thought we should contact.

Despite the widespread expansion of industry during the past five years, in my opinion there are thousands of new plants which will be built throughout the country. Among other reasons, military strategy requires dispersal of vital installations.

*The "effective rate" is the tax charge applicable after consideration has been given to the average equalization rate. For example, one community places all property on the tax rolls at 100% of market value. The tax rate is $1.75—and the effective rate is therefore 1.75. Another community places property on the rolls at 30% of market value and has a tax rate of $4.50. The indicated effective rate is 1.35.

Benchmarks and Yardsticks

A WRITER, ARCH PATTON, in the current issue of the Harvard Business Review calls attention to the growth in recent years of "security mindedness" in business management—as well as among employees in the ranks. In many companies today, there are liberal pensions and other "fringe benefits," distributed with little regard to the relative merit of the recipients. These benefits cost a lot of money; hence there have sometimes not been funds left with which to provide incentives to induce exceptional effort by managers.

The writer concludes that "there has been a drying up of that priceless source of top management training—decisions *involving personal risk* about styling, pricing, product policy, plant capacity, and so forth." The author believes a deliberate effort needs to be made to intensify management initiative in making risk-taking decisions, and he recommends specific steps toward this end.

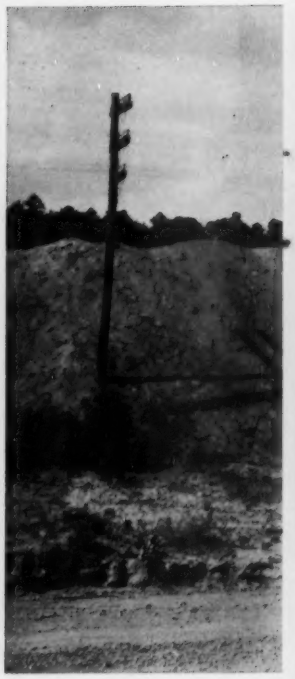
First of all he would establish monetary incentives for superior managerial performance. He would look critically at the tendency of rating staff jobs higher and higher, relative to those of the "line." He would scrutinize the "committee method" pretty carefully, to make certain that it is not working as a device to relieve managers of definite responsibility for the effectiveness of decisions. And he would decentralize!

He tells of "explosive improvement" which has occurred in divisional performance "when full responsibility is decentralized down to the top divisional executive." Your reporter has heard something about this from railroad people—that is, how ineffective divisional performance sometimes is when practically all local decisions have to be referred to central headquarters. When too many vital decisions have to be made in routine fashion by officers far removed from the scene of action, their average of effectiveness and timeliness is not likely to be too high.

Moreover, officers down the line are not being trained in the making of responsible decisions—just about the best training there is for promotion to top executive responsibilities.

The author clinches his discussion by telling of a business that grew from $12,000 gross to $9 million in 15 years—and with top officers' salaries only around $3,000 a year, but with incentive bonuses as high as $80,000. Even with this liberal bonus arrangement this company has averaged much lower total executive compensation than its nearest competitor. Quite evidently, it has paid this company well to make the reward for performance very attractive, with an equally tangible penalty for non-performance. Maximum managerial initiative is the best security there is, for stockholders and employees alike.

J. G. L.



STRUCTURES like this one were 2/3 mile apart on the average and spanned dry hollows, swamps and small creeks.

How Short Line Fills In Bridges

Because its 44-mile line runs across a watershed draining into the Gulf of Mexico, the Fernwood, Columbia & Gulf was in the situation of having almost more bridges than it knew what to do with. The road, a feeder line and overhead carrier between Fernwood, Miss., and Columbia, had 60 bridges scattered over its short length, spanning everything from swamps to dry hollows and small creeks.

Here's how it's done . . .

TOURNAPULL-SCRAPER and a tractor-dozer pick up fill material near each bridge, and the . . .

. . . SCRAPER hauls the earth along the right of way distances ranging up to about 1,000 ft to the bridge site where . . .

ALL BUT EIGHT of the bridges are being filled in and culverts installed to handle local run-off.

In an effort to reduce maintenance, repair and replacement costs, a study was made to determine how many of the bridges were actually needed to handle the run-off. It was found that all but eight of the structures could be filled in, using culverts to carry the flow.

So far, the road has filled in 23 of the 52 bridges which can be retired. Off-track grading equipment, including a 7-cu yd Tournapull-Scraper as the principal earth-moving unit, a tractor-dozer, and a dragline, is being used for the filling operations. Fill material is obtained from the right-of-way ditch-line on both sides of the track near each bridge, thus improving drainage conditions along the right of way at the same time.

The Tournapull is used to pick up the material from the right of way and transport it to the bridge site. Upon reaching the bridge, the machine, operating on one side of the track, is run up onto the fill already placed, and its load is dumped in an even layer. After the material has been unloaded, the scaper makes a U-turn under the bridge and returns for another load. The space between two bents at each end of the bridge is left open during the filling operation so that the scraper can pass under the structure.

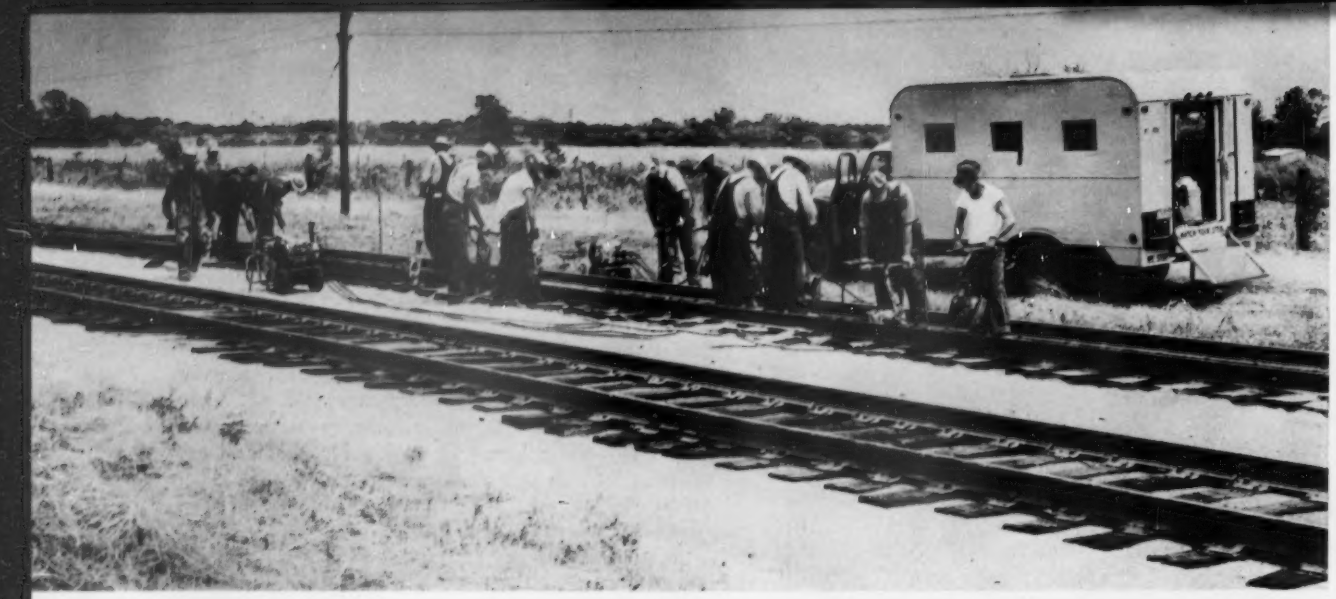
After the scraper has moved out of the way, following each dumping, the tractor-dozer is used to spread and compact the layer of material just dumped. When the level of the fill reaches a height where the shoulder is too narrow for the equipment to maneuver, a dragline is employed to finish the remainder of the fill. The scraper and bulldozer are then used to bring in and place dirt where it can be reached by the dragline.

Along the shoulders the fill material is built up somewhat higher than the top of the rail thus leaving a ridge of dirt to allow for settling and for filling in when the bridge deck is removed. The fill is allowed to settle for from nine months to a year. After settlement, the rail and ties are set aside and the stringers and caps are removed, leaving only the piling in the finished fill. The void left by removal of the decking is then filled in, crossties are placed and the running rail relaid.

One of the recent filling projects was a 300-ft trestle which required 17,000 cu yd of material for the fill. The base of the fill is 80 ft wide, the crown is 35 ft wide and the depth averages 26 ft. On this job, the scraper hauled material distances ranging between 1,050 ft and 1,200 ft, and was able to deliver almost 100 cu yd of earth per hour to the bridge site.

. . . MATERIAL is spread and compacted in even layers. Here scraper is making "U" turn under bridge, after which . . .

. . . MACHINE returns for a new load and makes another "U" turn, this time at the other end.



Maintenance Men Get a Break

How modern management methods, new ideas and new tools resulted in a track maintenance technique that improves work, reduces cost—and provides much better working conditions

Part 4 of a series on CONTEMPORARY RAILROAD MANAGEMENT

This article is the fourth in a series on contemporary railroad management: its goals, methods and outlook. The series is presented in the form of a case history of the Frisco. Preceding articles appeared in the issues of May 3, June 21 and July 26.

The fact that such a large part of the railroad industry's total costs are fixed, and cannot be adjusted to meet traffic and revenue fluctuations, has resulted in severe pressures in those departments where some measure of control can be exerted—such as in maintenance of way. Not only has it been necessary to hold down the cost of the work being done but it has been necessary to improve the standards of the work to meet the demands of present-day high-speed, heavy-tonnage trains. Individual railroads have met this problem in somewhat different ways, though all have resorted to mechanization and improved work methods of one kind or another.

Different from most was the St. Louis-San Francisco's approach to the problem. Under the guidance of E. L. Anderson, chief engineer and an "old timer" who has spent many years in track maintenance work, the Frisco reshaped its working organization around the need for intense mechanization and for larger gangs to handle the heavier rail and fittings now used. He has also kept a sharp eye out for means of improving living and working conditions and stabilizing employment for track laborers as a means of attracting and holding more men in this type of work. The result was the now widely known "district gang" track maintenance system. In the seven years it has been in actual use, it has proved popular with the men—though at first they did not all like it—and has made possible better maintenance at a lower cost.

The system is based on combining into a single district, the territories normally maintained by four to seven ordinary section gangs, with all heavy maintenance carried on by a single, highly mechanized gang working out of a central district headquarters. Patrolling and light maintenance work—known on the Frisco as "rabbit work"—is carried out by an assistant district gang foreman with the help of one or more men from the regular gang, as the job requires.

All new rail is laid by a system rail-laying organization which operates on an independent budget. Each gang is equipped with—or has available when needed—modern power tools to perform every aspect of normal maintenance work. Most of this equipment is mounted on trucks or rubber wheels for movement over the highway from one job to another. Further, each gang is equipped with a specially designed truck to take the men and their light tools from headquarters out to the job and back each day. The truck body is equipped with seats, bins for lunch boxes and light hand tools, and other conveniences.*

In common with many other railroads, in the years immediately after World War II the Frisco was having much trouble finding adequate help to staff its local maintenance forces, and even more trouble keeping what help it did find. The first "district gang" was created at Olathe, Kan. 20 miles from Kansas City on the main line south. The local roadmaster cooperated volun-

* Details of gang organization, tools and methods of operation have been reported in *Railway Age* (October 27, 1952, page 48) and *Railway Track and Structures* (September 1951, page 811, and January 1952, page 50).

tarily and fully in "selling" the idea to his men, and in getting it started and the initial "bugs" worked out.

When the plan was first conceived, Mr. Anderson and his staff saw in it an opportunity to improve working conditions and stabilize employment. On the Frisco, as on other roads, living and working conditions for most track laborers were not, and never had been, of the best. In times of labor shortage, the men naturally gravitated to other jobs where conditions were better. Each district gang now operates out of a "headquarters" town. Although Mr. Anderson prefers to establish these headquarters midway in the territory to be covered—preferably at a spot not more than 30 minutes by highway from the far reaches of the district—in actual practice he "gave and took" a little in order to select towns which would provide his men with adequate and attractive housing, recreation and school facilities. Inasmuch as the gang returns to this town every evening, it is possible for each man to spend most of his free time at home with his family.

Looking back, Mr. Anderson considers the careful selection of these "headquarters" towns an important element in the overall success of the plan. It is now a matter of record that he has had little trouble recruiting help—and better help—since the system became well established.

Mr. Anderson says he has enjoyed excellent personal relations with his men and their union for many years. In making the switch from section to "district" gangs he made a practice of always *informing* (but never *asking*) the men involved and the system chairman in advance of each move. At the very beginning he explained that the new system would mean fewer positions for gang foremen, but greatly improved living and working conditions plus opportunities for more specialty job ratings (which take higher pay rates).

At first the local section foremen didn't like the idea—some were bound to lose their foreman rating as the system spread—and neither did some of the local roadmasters. Mr. Anderson used his initial gang as a pilot operation and did not press for extension of the system to other territories until roadmasters and section foremen over the entire system had ample opportunity to become acquainted with the details of its operations. The second installation was made at Okmulgee, Okla., in October, 1948—but only after the local roadmaster had won the support of his foremen and voluntarily asked to have the system installed in his territory. This method of letting the men sell themselves took time, but each conversion made the following ones that much easier. Difficulty was encountered in only one out of the 36 districts converted. The last district gang was not placed in operation until January 1954.

Annual Work Program Essential

In order to program the work of these larger gangs most effectively and get greatest value from each dollar spent, it was necessary to develop an entirely different method of budgeting maintenance of way work. Maintenance-of-way budgets are one place where railroad management has traditionally "taken up slack" in its overall budgeting, cutting down drastically one month, building up the next, as traffic and revenues went down and up. This in turn made employment very erratic. The larger highly mechanized gangs made it impractical and very uneconomical to allow wide budgetary fluctuations from month to month.

CHIEF Engineer E. L. Anderson

The Frisco now prepares several maintenance of way budgets along with a yearly program of work to be accomplished. One is a *minimum monthly* budget for the district gangs which is based on the best available estimates of future traffic volume and revenues. This budget calls for somewhat less than presumably can be allowed for maintenance of way work under anticipated revenues. It calls for the minimum amount of work to be done during the month, predicted on a yearly program, and all materials, machines and crews are ordered and assigned accordingly. Then varying amounts of extra work are planned and budgeted but carried through only if traffic and revenues hold up sufficiently to permit the additional expense. Should traffic decline, the expendable portion of the work is stopped, but the basic minimum continues as scheduled.

This procedure calls for very careful budgeting and work programing—much more so than is normal railroad practice. But this budgeting and programing are almost as important to the success of the plan as the organization of the gang itself.

It is now over seven years since the first district gang was established. Mr. Anderson firmly believes his maintenance-of-way ratio and the physical condition of the railroad—not to mention his uncommon success in getting and holding good track maintenance men—is ample "proof of the pudding." In 1953 there was laid 111.62 miles of new rail, 40.0 miles of relay rail and 455.4 miles surfaced and ballasted out of face. The Frisco reports this work was accomplished with 2.4 million man-hours less labor than for 86.44 miles of new rail, 28 miles of relay rail and 287.0 miles of track surfaced and ballasted out of face in 1947.

Other System Gangs Changed

With the maintenance-of-way gangs now fully reorganized and functioning smoothly, Mr. Anderson and his staff have been concentrating attention on other aspects of maintenance work—always striving to develop im-

OLD PULLMAN, converted into a work car for maintenance-of-way employees.

proved work methods, improved gang efficiency, and better working conditions.

For example, the system rail laying gang now operates on a monthly program. Actual work for each monthly period starts on the first day of the month and is carried through continuously (including Saturdays and Sundays) at straight time rates until the ordinary number of working days in that month have been consumed. Work is then stopped until the following month, and the entire gang returns to its home base (Springfield, Mo.). This arrangement has resulted in better satisfied employees because the men now incur less expense when away from home, and actually get more continuous time at home. The result has been a marked reduction in labor turnover, reduced interference with normal railroad operations, and a much better working proposition for the boarding company.

For the bridge and building gangs which must spend long periods on the road away from home, the Frisco acquired a group of second-hand Pullman sleeping cars and former government kitchen cars. From their shells and a few old coaches it built entirely new work cars. The equipment was designed to make living as comfortable and pleasant as possible, and to provide the men with the best possible working equipment while on the road.

Most important is the greater efficiency and better territorial coverage which can be gained through the use of highway equipment. The bridge and building gangs, which are dependent on on-rail equipment, have been provided with both light and heavy duty trucks, some of the general-duty heavy trucks being equipped with a power winch. They are also supplied with as much off-track power equipment as practical.

The fullest value of complete mobility has been achieved in the Frisco's district welding gangs which are now self-contained units operating from specially equipped trucks and house trailers. The trailer is towed behind the one-ton truck assigned each 2-man gang and is parked at a railroad station near the work to be done and where the railroad can supply light, water, and sanitary facilities.

These highly mobile, versatile gangs, Mr. Anderson has found, really "pay off" in times of emergency. They can get to the scene of trouble quickly—and frequently have been the first to arrive. In the case of broken rails, frogs, switch points or track fastenings, temporary repairs can be made on the spot. At derailments the welding and cutting equipment, power drills and other tools which are carried on the truck can be brought to the scene quickly and easily—and generally are in use rebuilding the track and cutting away debris before the regular wrecking equipment arrives.*

Student Apprentice Program

In common with many other railroads, the Frisco has been striving to take positive action to offset the declining number of competent engineers available for maintenance-of-way work. Each year the Frisco actively seeks engineering students from universities and colleges in its area for enrollment in a two-year student apprentice program. The program is essentially a two-year course of training in railroad maintenance-of-way techniques, engineering and problems. It is followed by a six month period of training in other departments of the railroad, after which the students are usually appointed to some supervisory position. The Frisco reports that out of 26 who started on this program, only four have resigned, and a number have progressed to various supervisory positions.

It is inevitable that such extensive gang mechanization would result in maintenance problems on the equipment involved. This work is now handled at a roadway equipment shop converted from the old locomotive blacksmith shop at Springfield, Mo. The force that formerly performed this work under the direction of the purchase and stores department was transferred to the engineering department. The shop was equipped with new machine tools for handling automotive maintenance. Work is now on a production-line basis, and performed at a much accelerated rate over that formerly possible.

The Frisco is not necessarily unusual in its maintenance-of-way techniques. Although it has made great strides, so have other railroads which are likewise reaping the benefits of more and better work at lower cost which flow from the development of systems and procedures to fit the work to be done and the men and tools available to do it. It is inevitable that the exact methods and techniques used will vary from railroad to railroad because of local conditions and circumstances.

Most significant, however, is the underlying fact that the development of better procedures and new and more efficient methods lies in the way top management treats its system officers—the amount of support and authority it gives them to do their job properly—and how they in turn treat those under them. As was explained in the article "People Are Management" (May 3 *Railway Age*, page 34). President Hungerford and the Frisco have a definite policy of respecting both the dignity and the integrity of the individual—and giving him the full authority and responsibility for doing his job properly and well. Mr. Hungerford considers developments such as Mr. Anderson and his staff's improved maintenance methods the tangible fruits of this policy.

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*The workings of these welding gangs are described in *Railway Track and Structures*, March 1954, page 62.

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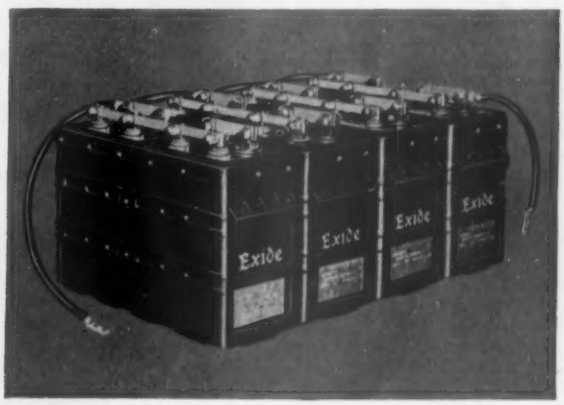
"KEEP ALL CARS brightly lighted and properly cooled" is a good rule of the road for keeping passengers comfortable. As glass areas increase and passenger loads fluctuate, the need for the abundant power of Exide-Ironclads becomes more vital. Ironclads respond instantly to all power demands. They give you worry-free performance, high uniform voltage under all operating loads. Also, lower costs for operation, maintenance and depreciation make Exide-Ironclad batteries your best power buy . . . AT ANY PRICE!

THE POSITIVE PLATES are the heart of any battery. Only Exide uses a slotted tube construction. By use of tubes, more active material is exposed to the electrolyte, providing *greater power*. Also, more active material is retained, *giving longer working life.*



IMPROVED Exide-Ironclads now have power tubes made from *non-oxidizing* plastic for longest battery life. For full details, call your Exide sales engineer—write for Form 5010 (Installation and Maintenance of Car Lighting and Air Conditioning Batteries).

Your best power buy
. . . AT ANY PRICE!

Exide®
IRONCLAD® BATTERIES

Exide INDUSTRIAL DIVISION, The Electric Storage Battery Company, Philadelphia 2, Pa.

the pioneer still leads

in TRACTION MOTOR BEARING DEVELOPMENT

The first anti-friction bearings applied to heavy-duty traction motors in this country—in 1926—were **SKF** *Bearings. Since then,* **SKF** *has pioneered these additional important developments in Traction Motor Bearing design—*

1939 - Crowned rollers which increased capacity.

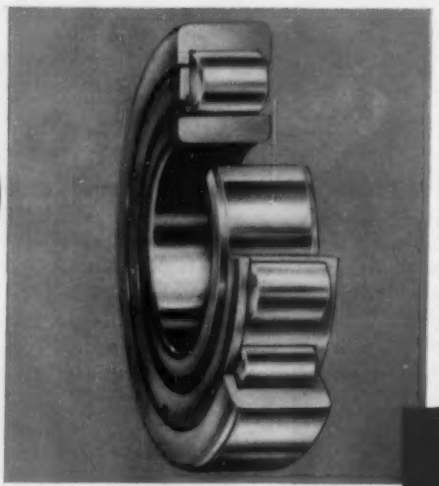
1943 - Assisted Railroads in developing "sealed-grease lubrication."

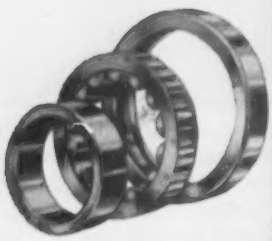
1945 - "High Capacity" Bearings. Larger and longer rollers further increased capacity without requiring additional space.

1948 - Cage re-design permitting complete disassembly and reassembly for inspection of all parts.

1952 - Longer life M-2 Cage, roller centered, while retaining all previous improvements. Sealed grease lubrication runs up to 500,000 miles without attention.

Here is today's SKF Pinion End Cylindrical Roller Bearing





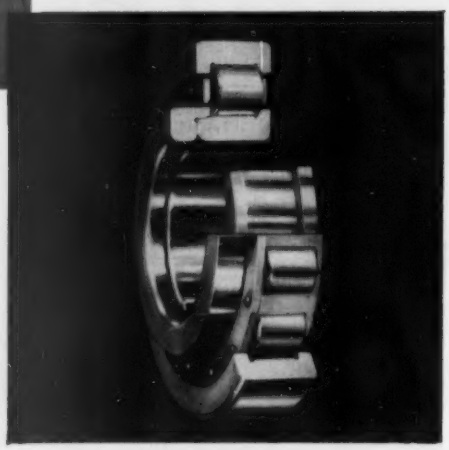
SKF'S NEW M-2 CAGE — USED IN BOTH PINION AND COMMUTATOR END BEARINGS — Here's how easy it is to disassemble for inspection. Just slide out the inner ring. You can then move the rollers out of the outer ring groove, and rollers and M-2 Cage slide right out. Replacement is just as easy.

Crowned rollers assure maximum capacity in minimum space.

Roller riding cage is easier to lubricate.

SKF's new M-2 Cage provides easy disassembly and inspection of all bearing surfaces.

Here is today's SKF Commutator End Traction Motor Bearing



Crowned Rollers.

Positively stabilizes the armature and holds it in its proper position in the motor frame.

Has M-2 Roller Riding Cage—same as Pinion End Bearing—for easy disassembly and inspection.

When you're laying-in anti-friction bearings, you can get design assistance from **SKF** Field or Home Office men who know the best ways to do the job.

SKF INDUSTRIES, INC., PHILA. 32, PA.—*manufacturers of* **SKF** *and* HESS-BRIGHT® *bearings.* 7441 A

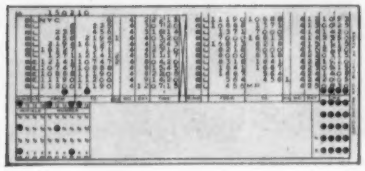
SKF
TRACTION MOTOR BEARINGS

Remington Rand

BETTER BUSINESS METHODS

For Greater Profits Through Lower Costs

How the new automatic car records help all departments on the Sante Fe



The Sante Fe now has an integrated system of fast car movement reporting and fully automatic car accounting. This entirely new and original system represents the culmination of years of study and research by the Sante Fe. Special railroad car accounting machines, designed by Remington Rand, made it possible to get the fully automatic results demanded by officials of the Sante Fe.

Teletyped wheel reports from any yard or terminal are automatically converted into punched cards in the office of the Superintendent of Car Service at Topeka – where a master card for each car is kept posted on all moves within *an average of four hours of the time the move actually occurred.* At the same time, this report appears as advance train consist information at the next affected yard or terminal for use in preparing switch lists, assignment of yard crews and motive power, etc.

Both the transportation and traffic departments stand to benefit greatly from the new installation by way of complete, fast information on cars and car movements which will be quickly and conveniently available. For a complete report on this major development in modern railroading, circle **TM909** on the coupon.

Improved shipper service. Better policing of bad order cars and empties in short supply. Tracer requests reduced by fast complete reports to district traffic offices.

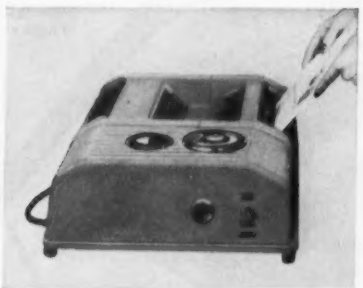
Simplified paper work. Complete elimination of duplicate effort throughout the system. Substantial savings of time in yard, station and telegraphic offices.

Lower operating costs. Per diem payments reduced by better control of car movements. New yardsticks of efficiency are made possible through the complete operating statistics provided.

Efficient microfilming at new low initial cost

You can speed train movements by recording waybills for an entire train in a few minutes... apply modern microfilm methods to payroll, revenue, claim and other smaller volume accounting jobs with a new low-cost machine.

The Model 8 Film-a-record, latest in the Remington Rand line of business photographic equipment, is small enough to carry, yet engineered to give highest quality, big-machine performance. Model 8 is equipped with warning signals, visible film supply indicator, and Colorstat to control the amount of light used for exposure. For more details, circle **F382.**



Daily interchange report now produced in seconds

You can convert a Wheel Report to an Interchange Report of Cars in less than one minute. Just mask the heading of the Wheel Report and photograph it with the new interchange heading in the amazing Transcopy Duplex machine. It exposes, develops and delivers a ready-to-use positive copy in seconds. Requires no darkroom, no running water, no messy trays, no washing or drying time. Ask for **P344.**

Efficient team helps to prepare station records

Many freight offices find that Remington Rand electric typing and Line-A-Time copy holding save valuable clerical time in preparing waybills, freight bills, switch lists, abstracts, passing reports and other records.

They get greater typing speed from the all electric keyboard. Also the 15 or more *clear* copies obtained from a single typing save the necessity of doing the job over a second or third time. The uniformly perfect print work is easier to read – reduces chances for error. It's tops for preparing all kinds of duplicating work, too. For your copy of a 16-page booklet dealing with this modern business tool, circle **RE8612** on the coupon below.

And they get still more typing efficiency on many records with the Remington Rand Line-A-Time Copyholder. This effective device holds the copy right before the operator's eyes – saves eyestrain and promotes more accurate work. To get all the facts on Line-A-Time, send for **RSL274.**

Remington Rand

Room 1841, 315 Fourth Ave., New York 10

"Yes, I'd like to have the literature circled."

TM909 F382 P344
RE8612 RSL274

Name_____

Title_____

Railroad_____

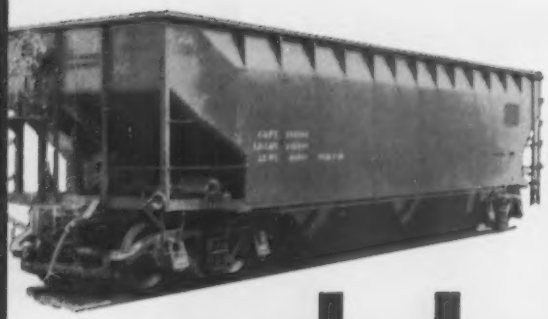
Address_____

City_____ Zone_____ State_____

RR-9

– Profit-Building **IDEAS** For Business –

New angle cock



WABCOSEAL®

seals brake pipe nipple

FOR FREIGHT CARS

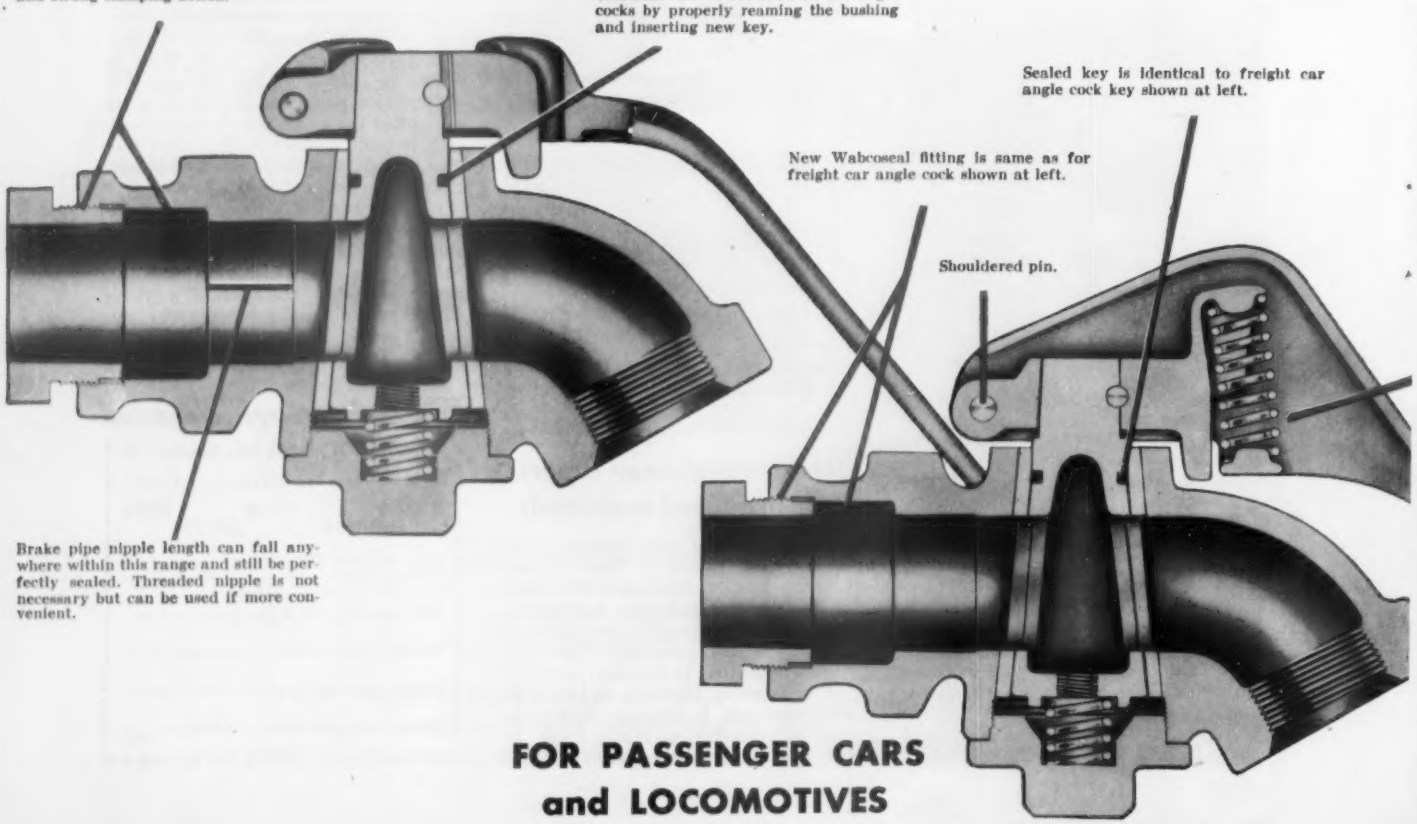
Wabco compression ring grips pipe when nut is tightened to provide tight seal and strong clamping action.

"O" ring seals the key effectively through a wide degree of key wear. This seal can be obtained on old angle cocks by properly reaming the bushing and inserting new key.

Sealed key is identical to freight car angle cock key shown at left.

New Wabcoseal fitting is same as for freight car angle cock shown at left.

Shouldered pin.

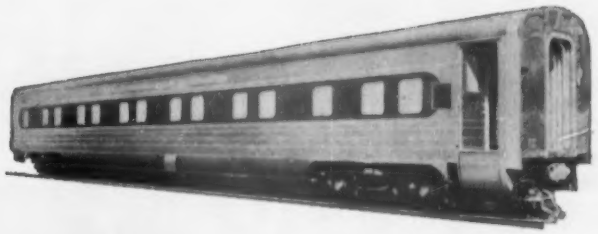


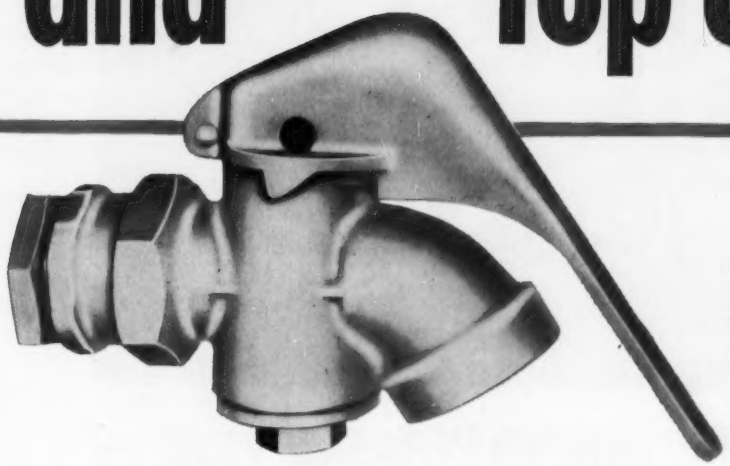
Brake pipe nipple length can fall anywhere within this range and still be perfectly sealed. Threaded nipple is not necessary but can be used if more convenient.

FOR PASSENGER CARS and LOCOMOTIVES

stops air leakage

Angle Cock and top of key





Strong spring is compressed when handle is raised. Socket is snapped into locking position when handle is fully open or closed. Available for application to angle cocks now in use.

THE new Wabcoseal Angle Cock is made in two styles—one for freight cars and one for passenger cars and locomotives. Both models feature a *sealed* key that stays tight for a wide degree of key wear thus eliminating one of the major causes of air leakage in angle cocks. The sealed key can be installed in your present angle cocks.

The new Wabcoseal Angle Cock has a Wabco compression ring instead of the present tapped fitting that is often a source of leakage. Adequate end tolerance is provided, so you do not have to cut the brake pipe nipple to a precise length.

For passenger cars and locomotives the Wabcoseal Angle Cock has a spring-locking handle that snaps the socket into the locked position when the handle is fully open or closed. A shouldered pin provides proper freedom of handle movement. You can buy this handle separately for the angle cocks you now own.

See your Westinghouse Air Brake representative for more information.

Westinghouse Air Brake
COMPANY

AIR BRAKE DIVISION WILMERDING, PA.

NEW MOVIE AVAILABLE entitled, *"AT THIS MOMENT"*—showing a vivid story of modern railroad progress. Length 26 minutes, on 16 mm. color sound film. For use of film write: United World Films, Inc., 1445 Park Ave., New York or Association Films, Inc., 347 Madison Ave., New York.

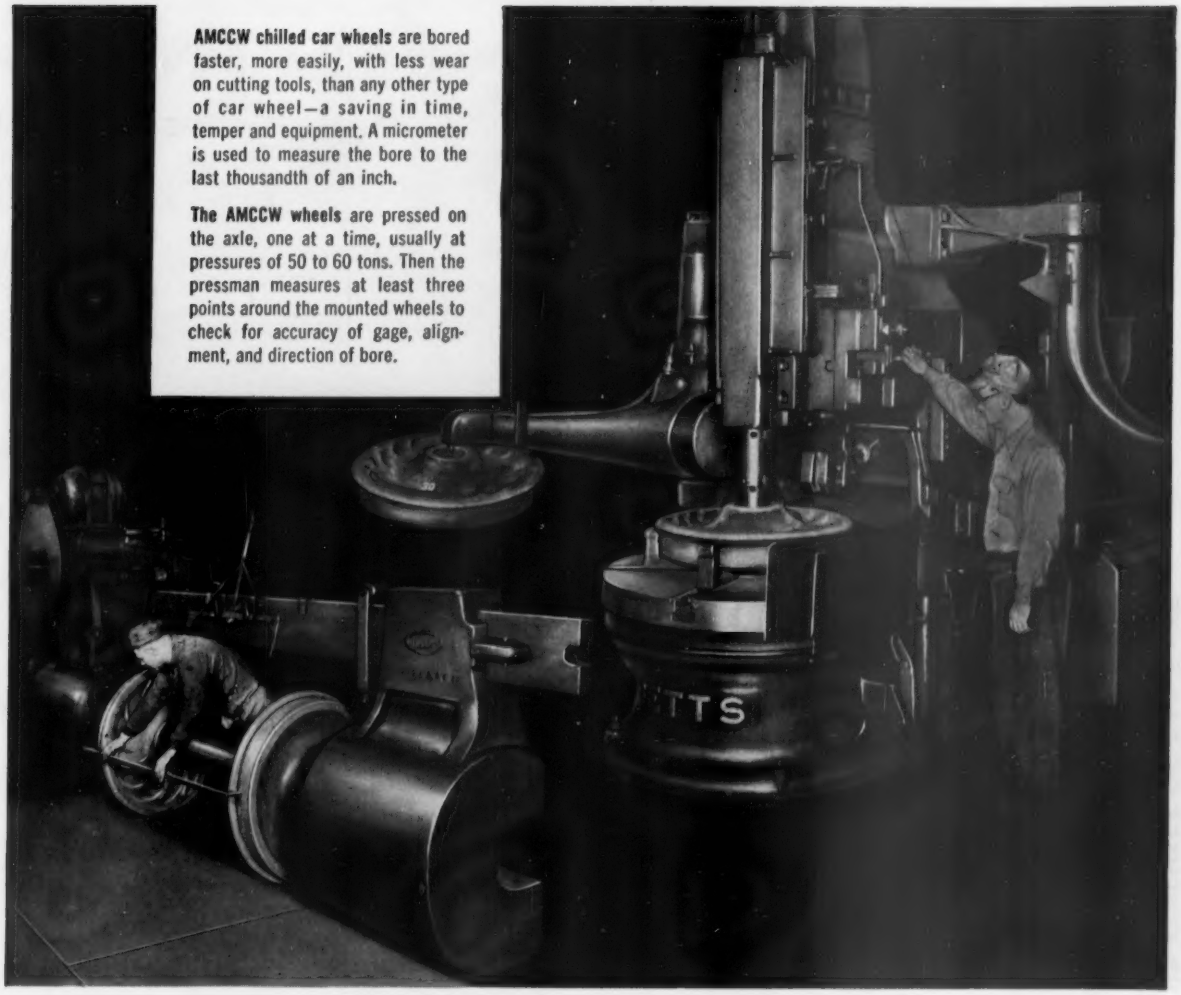
REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF JUNE AND SIX MONTHS OF CALENDAR YEAR 1954

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1954	Total (inc. misc.) 1953	Operating Expenses: Maint. Way and Structures: Total 1954	Total 1953	Deprec. and Retirements	Maint. Equipment: Total 1954	Total 1953	Deprec. and Retirements	Traffic	Transportation	Total 1954	Total 1953	Operating ratio 1954	Operating ratio 1953	Net from railway operations	Railway tax accruals	Net railway operating income 1954	Net railway operating income 1953
Akron, Canton & Youngstown	June	171	$434	.....	$440	$544	$72	$76	$6	$67	$53	$15	$37	$131	$346	$352	78.5	64.7	$95	$45	$38	$75
	6 mos.	171	2,473	.....	2,518	3,227	388	418	35	385	302	92	227	808	2,037	2,008	80.9	62.2	482	206	172	510
Atchison, Topeka & Santa Fe	June	13,076	38,241	$4,503	47,011	54,935	6,668	7,664	683	8,005	9,381	1,941	1,252	15,088	33,122	36,963	70.5	67.3	13,889	7,452	6,306	7,411
	6 mos.	13,071	213,999	20,486	259,181	309,625	37,600	45,165	3,929	50,573	55,070	11,445	7,277	86,284	193,769	211,977	74.8	68.5	65,413	36,496	28,642	40,853
Atlanta & St. Andrews Bay	June	82	321	1	327	316	26	31	4	24	20	5	6	70	144	146	43.9	46.2	184	85	65	51
	6 mos.	82	1,851	6	1,893	1,946	148	177	17	134	129	27	35	414	845	862	44.6	44.3	1,049	463	374	311
Atlanta & West Point	June	93	233	36	315	360	42	53	5	53	67	13	15	128	258	309	81.8	85.9	57	21	19	17
	6 mos.	93	1,429	205	1,923	2,248	271	311	39	331	416	78	92	835	1,659	1,887	86.3	84.0	264	123	46	115
Western of Alabama	June	133	270	34	335	371	57	53	7	63	69	17	17	122	281	308	83.8	83.2	54	28	26	32
	6 mos.	133	1,731	198	2,142	2,359	319	362	46	382	420	101	104	789	1,721	1,873	80.4	79.4	421	156	260	230
Atlantic & Danville	June	205	102	.....	103	149	41	35	2	4	15	5	12	43	110	120	106.8	80.3	— 7	7	—36	— 4
	6 mos.	205	835	.....	846	1,013	188	208	11	65	90	29	71	278	671	746	79.3	73.6	175	53	—33	58
Atlantic Coast Line	June	5,353	9,939	1,191	12,058	13,247	2,454	2,477	189	2,857	3,643	595	394	4,655	10,929	11,985	90.6	90.5	1,130	125	592	442
	6 mos.	5,362	64,988	10,166	82,036	90,515	12,466	14,663	1,080	15,898	21,027	3,551	2,363	29,381	63,840	73,935	77.8	81.7	18,196	8,750	6,635	5,399
Charleston & Western Carolina	June	343	556	1	569	635	183	140	— 1	104	92	42	19	166	486	436	85.9	68.6	80	35	28	88
	6 mos.	343	3,393	9	3,481	3,696	892	888	47	612	597	255	108	1,004	2,699	2,682	77.5	72.6	782	330	381	514
Baltimore & Ohio	June	6,183	28,351	1,825	32,737	41,541	3,827	5,612	397	6,684	8,279	1,025	860	13,475	26,463	32,051	80.8	77.2	6,274	1,850	3,120	4,443
	6 mos.	6,183	164,748	9,852	188,239	230,620	21,891	29,983	2,686	37,253	48,836	6,141	5,125	79,835	153,453	181,255	81.5	78.6	34,786	10,912	16,920	23,779
Staten Island Rapid Transit	June	29	186	52	240	296	50	59	12	24	28	2	2	128	239	258	92.2	87.0	2	39	—55	—19
	6 mos.	29	1,095	305	1,419	1,765	288	376	70	159	187	12	9	768	1,401	1,653	98.8	93.6	17	231	—327	—244
Bangor & Aroostook	June	602	662	29	734	837	200	200	16	220	226	85	19	254	766	750	104.4	89.6	—32	Cr 1	107	110
	6 mos.	602	7,741	175	8,178	7,878	1,700	1,700	95	1,354	1,404	481	121	1,991	5,585	5,531	68.3	70.2	2,592	1,086	1,523	1,284
Bessemer & Lake Erie	June	209	2,614	1	2,630	3,391	227	228	28	536	716	142	23	463	1,349	1,581	51.3	46.6	1,281	649	870	780
	6 mos.	209	10,154	2	10,245	14,399	1,246	1,234	124	3,747	4,415	851	150	2,428	8,160	9,009	79.7	62.6	2,085	1,009	2,049	2,794
Boston & Maine	June	1,676	5,098	998	6,946	7,615	1,389	1,370	147	1,003	1,044	172	119	3,051	5,891	5,860	84.8	77.0	1,054	495	106	592
	6 mos.	1,676	31,232	5,227	41,143	45,045	7,788	7,872	977	6,311	6,831	1,035	715	18,473	35,304	36,308	85.8	80.6	5,838	3,044	—173	2,532
Cambria & Indiana	June	35	114	.....	114	150	23	19	1	102	95	22	.....	21	154	145	135.8	96.3	—41	51	64	79
	6 mos.	35	768	.....	769	910	116	110	5	632	579	134	1	129	921	858	119.8	94.3	—152	319	400	467
Canadian Pacific Lines in Maine	June	234	289	40	361	367	127	149	5	90	118	17	8	169	409	478	113.4	130.3	—48	27	—98	—154
	6 mos.	234	3,222	288	3,682	4,144	604	670	32	681	920	104	48	1,396	2,818	3,294	76.5	79.5	864	166	455	429
Canadian Pacific Lines in Vermont	June	90	189	11	228	224	68	93	5	27	41	.....	7	119	230	266	100.8	118.7	— 2	13	—76	—116
	6 mos.	90	1,123	78	1,336	1,368	267	407	26	177	231	1	41	726	1,266	1,469	94.7	107.3	70	76	—364	—500
Central of Georgia	June	1,764	2,874	143	3,263	3,585	523	570	48	539	574	139	148	1,311	2,713	2,871	83.1	80.1	550	208	311	353
	6 mos.	1,775	17,276	957	19,945	22,592	3,114	3,600	265	3,262	3,529	835	857	7,912	16,413	17,711	82.3	78.4	3,532	1,282	1,932	2,169
Central of New Jersey	June	613	3,937	457	4,735	5,405	718	785	91	771	969	175	74	1,958	3,715	4,254	78.5	78.7	1,020	469	328	592
	6 mos.	613	23,103	2,617	27,858	31,479	3,867	4,258	525	5,185	6,316	1,046	464	12,038	22,768	25,423	81.7	80.8	5,090	2,795	1,463	2,340
Central Vermont	June	422	804	40	922	1,020	274	242	16	87	95	11	19	370	792	758	85.9	74.3	130	44	—11	110
	6 mos.	422	4,680	336	5,430	5,822	1,209	1,192	99	645	812	65	102	2,219	4,426	4,592	81.5	78.9	1,004	248	166	429
Chesapeake & Ohio	June	5,097	23,697	720	25,917	30,257	3,870	4,082	371	4,806	5,445	1,513	663	8,646	19,298	20,650	74.5	68.2	6,619	2,793	4 210	5,497
	6 mos.	5,098	137,179	3,737	148,184	171,045	21,865	23,722	2,244	30,269	32,854	9,081	4,216	50,976	115,149	121,838	77.7	71.2	33,035	13,053	22,177	23,566
Chicago & Eastern Illinois	June	868	2,155	308	2,736	2,989	359	328	28	400	566	131	131	1,078	2,142	2,331	78.3	78.0	593	155	298	326
	6 mos.	868	13,115	1,341	16,113	18,116	2,073	2,235	168	2,804	3,179	783	777	6,303	13,023	13,780	8.08	76.1	3,089	853	1,645	2,114
Chicago & Illinois Midland	June	130	642	.....	655	722	55	82	7	132	160	23	33	205	475	571	72.6	79.2	180	90	56	41
	6 mos.	130	3,516	.....	3,593	4,312	387	503	41	840	927	140	201	1,207	2,916	3,250	81.2	75.4	676	325	161	355
Chicago & North Western	June	7,876	12,727	2,151	16,547	17,651	2,679	3,372	394	3,122	3,207	838	397	7,246	14,289	15,599	86.4	88.4	2,258	1,064	466	417
	6 mos.	7,876	68,922	10,326	89,041	98,551	14,405	16,874	2,078	17,115	18,901	4,916	2,301	42,628	81,489	88,165	91.5	89.5	7,552	6,199	—2,666	1,371
Chicago, Burlington & Quincy	June	8,858	15,661	1,783	19,704	22,640	3,932	4,771	420	3,314	3,302	810	496	7,866	16,459	17,469	83.5	77.2	3 245	1,599	1,425	1,741
	6 mos.	8,862	99,111	8,628	121,707	133,233	16,111	20,503	2,351	20,759	19,811	4,757	3,021	46,237	91,010	95,830	74.8	71.9	30,697	15,582	13,548	14,683
Chicago Great Western	June	1,470	2,384	7	2,560	2,901	400	475	41	377	319	120	107	830	1,739	1,872	69.9	64.5	772	230	325	384
	6 mos.	1,470	14,911	42	15,965	13,154	2,329	2,166	261	2,486	1,625	723	665	5,029	10,957	9,069	68.6	68.9	5,008	1,831	2,015	1,772
Chicago, Indianapolis & Louisville	June	541	1,404	59	1,592	1,638	247	335	19	268	270	70	92	601	1,310	1,394	82.3	85 1	282	85	100	84
	6 mos.	541	9,027	360	10,142	10,818	1,544	2,022	130	1,544	1,604	420	534	3,715	7,949	8,471	78.4	78.3	2,194	746	887	944
Chicago, Milwaukee, St. Paul & Pacific	June	10,640	16,433	1,461	20,063	21,931	4,461	4,777	349	4,173	4,594	896	508	7,852	18,011	19,377	89.8	88.4	2,052	1,376	—93	617
	6 mos.	10,639	94,594	6,810	113,426	126,903	19,431	20,333	2,423	25,172	27,514	5,331	2,867	46,922	100,313	107,712	88.4	84.9	13,112	7,936	1,098	5,875
Chicago, Rock Island & Pacific	June	7,886	14,560	1,619	17,820	18,975	2,530	2,667	234	2,613	2,827	563	471	6,038	12,489	12,954	70.1	68.3	5,331	2,387	2,120	2 644
	6 mos.	7,887	75,896	8,250	93,037	105,902	12,152	12,794	1,496	15,932	16,372	3,390	2,911	35,039	70,977	73,120	76.3	69.0	22,061	8,889	8,670	14,079
Chic., St. Paul, Minn. & Omaha	June	1,616	2,333	166	2,725	2,471	460	595	50	401	380	90	65	1,263	2,317	2,476	85.0	100.2	409	163	—11	—373
	6 mos.	1,616	13,283	853	15,391	15,867	2,416	2,814	290	2,432	2,529	552	384	7,692	13,682	14,874	88.9	93.7	1,709	993	—830	—1,329
Clinchfield	June	317	1,692	.....	1,703	2,099	339	350	20	226	319	91	49	362	1,017	1,187	59.7	56.6	686	239	534	826
	6 mos.	317	10,094	4	10,146	12,532	1,875	2,117	117	1,886	2,094	820	285	2,304	6,607	7,220	65.1	57.6	3,539	1,435	2,352	4,588

(Continued on page 46)



AMCCW chilled car wheels are bored faster, more easily, with less wear on cutting tools, than any other type of car wheel—a saving in time, temper and equipment. A micrometer is used to measure the bore to the last thousandth of an inch.

The AMCCW wheels are pressed on the axle, one at a time, usually at pressures of 50 to 60 tons. Then the pressman measures at least three points around the mounted wheels to check for accuracy of gage, alignment, and direction of bore.

Why **wheel shop men** like chilled car wheels

The wheel that carries nearly two-thirds of the nation's freight cars. All AMCCW plants produce the improved car wheel with more brackets, to give thicker, heavier, more continuous flange support . . . and with a heavier tread on both rim and flange sides.

Wheel shop men can tell you quicker than anyone else how they can bore AMCCW chilled car wheels nearly twice as fast, with greater speeds and feeds . . . how they save time and reduce wear on expensive equipment . . . how they mount with a firm grip at only 50 to 60 tons pressure. Chilled car wheels are not only easier to mount, they make better safety records because iron *likes* to cling to steel.

That's why AMCCW wheels are the most popular ones in the wheel shop. Other economic advantages of the chilled car wheel are listed below. If you'd like to have the facts about today's chilled car wheel summarized for convenient reference, send for the free booklet, "The Chilled Car Wheel."

Low first cost • Low exchange cost • Available locally • Short-haul delivery • Reduced inventory • Increased ton mileage • High safety standards • AMCCW plant inspection • Easier shop handling

ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS

445 North Sacramento Boulevard, Chicago 12, Ill.

Albany Car Wheel Co. • ACF Industries, Inc.
Marshall Car Wheel & Foundry Co. • Griffin Wheel Co.
Pullman Standard Car Mfg. Co. • Southern Wheel (American Brake Shoe Co.)

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF JUNE AND SIX MONTHS OF CALENDAR YEAR 1954

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1954	Total (inc. misc.) 1953	Operating Expenses: Maint. Way and Structures: Total 1954	Total 1953	Deprec. and Retirements	Maint. Equipment: Total 1954	Total 1953	Deprec. and Retirements	Traffic	Transportation	Total 1954	Total 1953	Operating ratio 1954	Operating ratio 1953	Net from railway operations	Railway tax accruals	Net railway operating income 1954	Net railway operating income 1953
Colorado & Southern	June	729	968	68	1,158	1,277	187	199	19	263	168	42	31	421	968	890	83.6	69.7	190	83	80	194
	6 mos.	729	5,488	355	6,579	7,806	868	948	121	1,362	1,114	248	184	2,519	5,283	5,269	80.3	67.5	1,296	597	576	1,124
Ft. Worth & Denver	June	1,038	1,776	169	2,126	2,330	284	415	42	272	261	44	57	628	1,344	1,470	63.2	63.1	781	279	357	396
	6 mos.	1,038	8,976	736	10,680	12,022	1,726	1,798	239	1,648	1,596	259	349	3,675	7,985	8,237	74.8	68.5	2,695	721	1,282	1,704
Colorado & Wyoming	June	40	346	....	235	269	17	24	2	26	40	11	1	96	151	176	64.0	65.4	84	44	37	23
	6 mos.	40	646	....	1,176	1,770	74	120	12	155	216	68	9	516	821	1,06	69.8	59.9	355	172	170	280
Columbus & Greenville	June	168	162	....	168	174	36	37	4	28	25	6	4	46	135	147	80.1	84.6	34	26	9	9
	6 mos.	168	913	....	959	1,051	176	211	22	155	157	37	27	277	750	803	78.3	76.4	208	145	59	98
Delaware & Hudson	June	793	3,909	134	4,208	4,877	609	771	50	723	799	179	87	1,485	3,104	3,480	73.9	71.4	1,096	277	753	1,104
	6 mos.	793	22,171	877	23,971	27,215	3,483	4,367	314	4,752	4,974	1,084	530	9,182	19,210	20,715	80.1	76.1	4,761	1,690	2,686	4,639
Delaware, Lackawanna & Western	June	962	5,064	767	6,471	7,850	772	951	147	1,094	1,299	318	178	3,009	5,323	5,875	82.3	74.8	1,148	522	583	962
	6 mos.	962	30,648	4,582	39,150	45,547	4,795	5,128	833	6,720	7,686	1,909	1,068	18,239	32,527	34,751	83.1	76.3	6,623	2,968	3,220	5,292
Denver & Rio Grande Western	June	2,164	5,195	281	5,761	7,098	1,090	1,307	114	922	1,147	288	189	1,705	4,188	4,951	72.7	69.8	1,573	482	1,156	936
	6 mos.	2,165	31,806	1,298	34,440	41,916	5,031	5,758	673	5,641	6,530	1,719	1,131	10,277	23,789	27,736	69.1	66.2	10,652	4,606	6,370	6,203
Detroit & Mackinac	June	232	165	....	168	187	40	42	3	26	24	9	5	38	123	119	73.1	63.8	45	25	20	30
	6 mos.	232	914	2	934	999	240	250	16	136	145	56	30	215	691	698	73.9	69.9	244	156	121	152
Detroit & Toledo Shore Line	June	50	543	....	579	655	80	80	4	57	70	18	17	184	352	410	60.9	62.6	227	63	58	70
	6 mos.	50	3,721	....	3,997	4,532	474	480	20	355	386	107	102	1,149	2,163	2,332	54.1	51.5	1,834	613	522	715
Detroit, Toledo & Ironton	June	464	1,323	....	1,364	1,714	298	260	24	272	255	98	35	379	1,049	1,249	76.9	72.9	315	134	225	222
	6 mos.	464	9,050	2	9,377	11,297	1,615	1,436	135	1,626	1,471	583	208	2,646	6,509	7,978	69.4	70.6	2,868	1,126	1,596	1,406
Duluth, Missabe & Iron Range	June	566	5,501	1	6,452	8,371	553	604	72	629	671	110	9	1,585	2,886	3,363	44.7	40.2	3,566	428	3,115	1,519
	6 mos.	567	13,669	2	16,000	25,025	3,238	3,349	380	4,664	4,496	665	60	5,982	14,611	16,788	91.3	67.1	1,389	1,342	—76	2,949
Duluth, South Shore & Atlantic	June	553	528	4	563	668	147	182	10	114	126	23	27	201	511	585	90.8	87.6	52	28	16	9
	6 mos.	553	3,185	28	3,392	4,249	745	886	62	777	918	139	164	1,170	2,989	3,431	88.1	80.7	403	165	172	294
Duluth, Winnipeg & Pacific	June	175	406	1	414	392	91	105	4	71	73	2	6	190	366	373	88.4	95.0	48	34	—38	—66
	6 mos.	175	2,556	4	2,602	2,631	440	489	25	403	430	13	32	1,239	2,160	2,164	83.0	82.3	442	203	—197	—82
Elgin, Joliet & Eastern	June	236	3,084	....	3,819	4,631	216	323	25	416	1,088	114	35	1,321	2,153	3,244	56.4	70.1	1,666	212	1,287	295
	6 mos.	236	18,295	....	22,484	28,530	1,560	1,787	145	10,933	5,863	688	214	8,568	22,306	18,919	99.2	66.3	179	1,303	—2,545	2,342
Erie	June	2,225	11,177	616	12,994	15,817	2,161	2,349	236	2,045	2,173	514	340	5,575	10,754	11,588	82.8	73.3	2,240	658	883	1,680
	6 mos.	2,224	66,849	3,310	76,303	91,150	10,221	11,539	1,412	12,442	12,909	3,031	2,142	32,259	60,984	66,414	79.9	72.9	15,319	4,941	6,573	10,318
Florida East Coast	June	571	1,610	312	*2,074	2,129	404	368	50	504	510	78	79	889	2,007	1,873	96.8	88.0	66	Cr 158	56	158
	6 mos.	571	13,153	3,754	18,419	19,684	2,245	2,216	265	2,913	3,165	467	469	6,818	13,542	13,716	73.5	69.7	4,878	1,221	2,288	2,904
Georgia Railroad	June	321	604	24	688	815	131	111	9	128	138	33	33	299	624	637	90.7	78.1	64	37	66	179
	6 mos.	321	3,626	139	4,171	4,827	774	728	56	778	820	195	205	1,798	3,766	3,944	90.3	81.7	405	212	399	823
Georgia & Florida	June	337	287	....	290	354	94	104	3	37	38	8	19	93	258	272	89.0	76.7	32	....	4	34
	6 mos.	337	1,737	....	1,757	2,038	540	621	21	239	226	45	118	556	1,553	1,647	88.4	80.8	205	90	—39	97
Grand Trunk Western	June	952	4,107	249	4,700	5,283	799	796	52	799	928	89	85	2,215	4,092	4,242	87.1	80.3	608	312	—115	350
	6 mos.	952	26,116	1,203	29,369	32,406	4,136	4,276	310	5,185	5,306	536	472	13,032	23,924	24,706	81.5	76.2	5,445	1,883	1,489	3,908
Canadian Nat'l Lines in New Eng.	June	172	194	8	225	206	99	71	9	24	41	....	3	118	261	279	116.1	135.5	—36	25	—114	—145
	6 mos.	172	969	27	1,126	1,411	428	423	56	207	262	1	16	802	1,538	1,666	136.6	118.1	—412	150	—891	—713
Great Northern	June	8,306	21,151	1,251	24,255	24,948	4,982	5,101	322	3,539	3,772	762	409	7,125	16,938	17,432	69.8	69.9	7,317	2,890	3,728	3,124
	6 mos.	8,305	99,735	4,982	113,073	121,128	22,799	23,716	1,948	22,432	22,689	4,490	2,470	40,158	92,944	94,886	82.2	78.3	20,130	10,403	6,631	9,728
Green Bay & Western	June	224	357	....	363	385	116	102	4	41	40	8	24	107	305	265	84.2	68.8	57	27	5	38
	6 mos.	224	2,107	....	2,141	2,229	482	468	24	266	240	47	138	623	1,614	1,464	72.3	65.7	526	241	144	262
Gulf, Mobile & Ohio	June	2,758	5,590	346	6,401	7,482	1,023	1,204	72	1,288	1,363	283	273	2,045	4,985	5,397	77.9	72.1	1,416	521	634	852
	6 mos.	2,763	36,104	1,982	40,921	46,800	5,959	6,927	427	8,044	8,361	1,667	1,669	12,782	30,624	32,325	74.8	69.0	10,297	4,130	4,204	5,783
Illinois Central	June	6,537	18,003	1,800	22,047	25,043	3,716	4,242	374	3,927	4,111	730	544	8,319	17,534	18,507	79.5	73.9	4,513	2,243	1,790	2,503
	6 mos.	6,537	111,982	10,278	136,559	151,170	21,258	22,979	2,328	24,810	25,058	4,172	3,223	51,190	106,739	110,663	78.2	73.2	29,820	16,190	10,715	15,159
Illinois Terminal	June	355	755	52	896	1,120	135	165	25	138	186	42	44	387	761	861	85.0	76.9	135	61	54	114
	6 mos.	355	4,416	329	5,252	6,147	832	946	152	924	1,075	251	274	2,199	4,596	4,988	87.5	81.1	656	325	271	542
Kansas City Southern	June	891	2,899	119	3,348	3,802	287	539	34	378	496	92	85	1,026	1,903	2,433	56.8	64.0	1,446	627	640	596
	6 mos.	891	18,079	684	20,809	24,714	2,089	2,883	217	2,327	2,971	540	573	6,299	12,045	14,194	57.9	57.4	8,764	3,866	3,722	4,404
Kansas, Oklahoma & Gulf	June	327	418	....	421	549	62	89	7	28	48	11	29	113	253	312	60.0	56.8	168	52	83	92
	6 mos.	327	2,534	2	2,549	3,532	361	528	44	219	214	68	170	696	1,573	1,799	61.7	50.9	976	404	371	681
Lake Superior & Ishpeming	June	156	427	....	528	696	68	74	13	53	61	16	2	106	242	285	45.9	41.0	286	32	261	214
	6 mos.	156	1,068	....	1,296	1,931	358	346	79	380	358	95	12	393	1,208	1,296	93.2	67.1	88	157	17	369
Lehigh & Hudson River	June	96	261	....	262	294	44	50	2	28	28	8	15	84	183	185	69.9	63.1	79	30	25	39
	6 mos.	96	1,629	....	1,633	1,711	240	247	14	187	181	51	82	533	1,113	1,088	68.1	63.6	520	190	167	223
Lehigh & New England	June	180	496	....	500	899	79	95	7	134	143	40	16	193	454	551	90.9	61.3	46	42	64	209
	6 mos.	180	3,267	....	3,297	3,711	466	519	39	856	760	238	79	1,164	2,795	2,755	84.8	74.2	502	363	487	698
Lehigh Valley	June	1,163	5,159	276	5,732	6,752	914	909	94	872	1,100	208	135	2,372	4,539	4,885	79.2	72.4	1,193	330	664	1,017
	6 mos.	1,163	28,336	1,712	31,927	38,065	4,782	4,905	560	5,359	6,460	1,240	824	13,953	26,419	28,350	82.7	74.5	5,509	2,285	2,281	5,201
Long Island	June	360	1,156	3,464	4,844	5,215	765	697	97	916	869	125	14	2,410	4,274	4,005	88.2	76.8	570	362	—97	434
	6 mos.	360	6,397	18,652	26,421	27,514	4,107	3,918	557	5,587	5,315	750	92	14,411	25,234	23,860	95.5	86.7	1,187	2,153	—2,726	—911

(Continued on page 52)

These and many others depend on Esso Railroad Products

High quality Esso Railroad fuels and lubricants are being used in more and more railroad diesels for smooth, powerful performance... long, trouble-free service.

Toughest tests ... on the road and in the lab insure that Esso Railroad Products meet and surpass the most rigid requirements set by the fast pace of modern railroading.

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VARSOL—Stoddard Solvent
SOLVESSO—Aromatic solvent
ESSO Weed Killer
ESSO Hot Box Compound
AROX—pneumatic tool lube
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Rail Joint Compounds
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RUST-BAN—corrosion preventive

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6 New Ways

to use steel for improving freight service

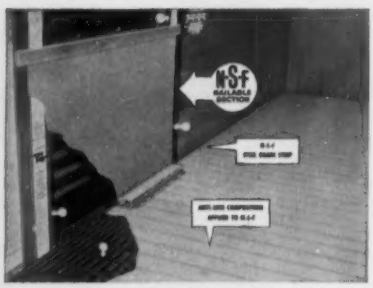
Tomorrow's standard in floors — and already in use by over 50 railroads —NAILABLE STEEL FLOORING, the floor with the unique nailing groove. Moderately higher than other materials in original costs, N-S-F opens new avenues for reducing operating expenses—and more than pays for itself.

Permanent anchoring devices for flatcar loads—N-S-F with Multi-Position Holddown Fixtures—scientifically spaced channels with recessed rings or other types of anchoring devices. They provide maximum security with least time and trouble in loading. A new means to attract freight.

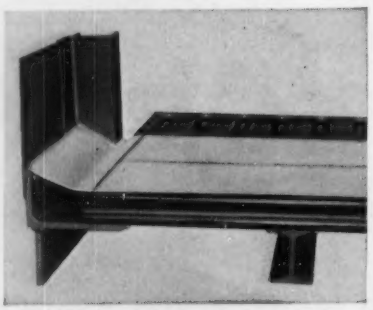
One man easily handles N-S-F Refrigerator Car Floor Racks when equipped with spring hinges—a new feature for floor racks. It is strong enough to permit handling freight with lift trucks . . . does not break down under repeated use. And its nailability permits conventional blocking.

New N-S-F Nail Puller . . . a means to minimize damage to freight and injury to personnel. The head-end of this multi-purpose tool has a claw for straightening bent nails, and a stem-grip that firmly grasps nails (with or without heads) for fast removal.

Sales Representatives in Chicago, Philadelphia, St. Louis, Atlanta, Omaha, Denver, San Francisco, Montreal and New York.



The N-S-F Doorpost Section improves security for bulk and blocked lading—reduces claims and protects freight. It utilizes the unique N-S-F nailing groove principle to eliminate damage from large nails. Wood insert provides means to fasten paper grain doors, etc., with small nails.



Welded to car side sills and to NAILABLE STEEL FLOORING the N-S-F Steel Grain Strip makes a clean, tight car—stops leakage of bulk freight and eliminates vermin infestation. An effective claim reducer, easily installed.

N-S-F for NAILABLE STEEL FLOORING

PATENTED—PATS. PENDING

GREAT LAKES STEEL CORPORATION

STEEL FLOOR DIVISION

Ecorse, Detroit 29, Michigan

NATIONAL STEEL CORPORATION

PRODUCER OF NAX HIGH-TENSILE STEEL

54-SF-7

THE NEW

WAUGHMAT

SINGLE ACTION *Twin Cushions*

exceeds every requirement of the Association of American Railroads

58.3%
EXTRA CAPACITY
START OF TEST

52.6%
EXTRA CAPACITY
END OF TEST

OFFICIAL CAPACITY
AT NOMINAL TRAVEL
28,500 ft. lbs.

AVAILABLE CAPACITY
WITHOUT METAL CONTACT
51,600 ft. lbs.

In the A.A.R. Tests all five test gears functioned perfectly. The Official Capacity at nominal travel exceeded the A.A.R. specification requirements by 58.3 percent. After the endurance and sturdiness tests these gears exceeded the capacity requirements by 52.6 percent.

In short, the tests indicate that the Waughmat Single Action TWIN-CUSHION, Type WM-DC-5, can be expected to last the lifetime of a car . . . of a car that lasts longer because of the superior protection this gear provides.

The single action TWIN-CUSHION is composed of two sets of WAUGHMATS held in an interlocking steel housing. Both sets of WAUGHMATS function in unison, cushioning in pull and in buff.

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420 LEXINGTON AVENUE • NEW YORK 17, N. Y.
CHICAGO — ST. LOUIS
CANADIAN WAUGH EQUIPMENT COMPANY, MONTREAL

FREIGHT—new improved design cuts cost up to $200 per car set.

DIESEL—nearly 70% of all road diesels roll on Hyatts.

PASSENGER—Hyatts are preferred for *easiest* installation and maintenance.

Your best bet to

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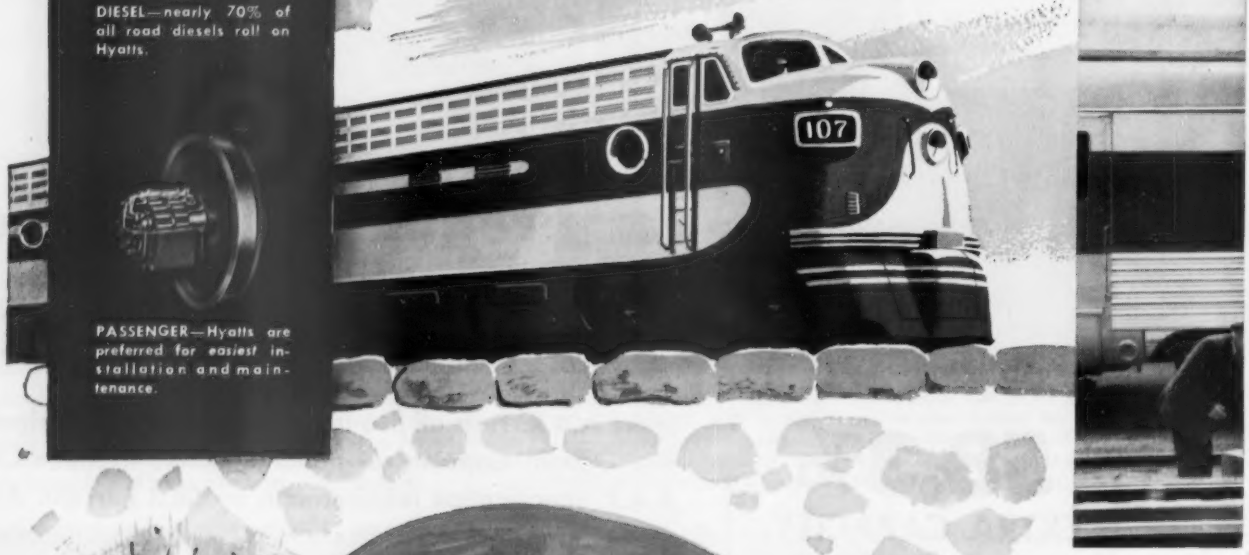

for

HYATT

ROLLER BEAR JOURNAL BOX

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HYATT BEARINGS DIVISION • GENERAL MOTORS CORPORATION • HARRISON, NEW JERSEY

BUSINESS...

HYATT ROLLER BEARING JOURNAL BOXES

Diesels . . . for passenger cars . . . for freight

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ES

Today's travelers are in a hurry. They want speed, and a smooth, relaxing ride. Shippers, too, demand faster service and minimum damage to lading. And everyone wants maximum safety.

That's why so many railroads are investing in roller bearing journal boxes—for diesels, for passenger cars, and for freight. *Roller bearings eliminate the hot box problem and permit the faster, safer, smoother service that attracts business!*

Important as it is, that's only half the story. Because when you invest in *Hyatt* Roller Bearing Journal Boxes, your savings multiply! Hyatt—and *only* Hyatt—offers the railroads *all* of these *extra* benefits:

1. **Controlled lateral**—Hyatt design allows freedom of axle movement, meaning a smoother ride and less wear on wheels and truck parts.
2. **Easiest installation**—Hyatt's amazingly simple assembly means important savings in man-hours whenever boxes are installed or reassembled.
3. **Press fits are not disturbed** when boxes are removed for inspection. A wheel is easily removed without disturbing the one-piece inner race.
4. **Reduced spare parts inventory** is possible because spare axles and wheels are fitted with inner races only.
5. **Large-size straight radial rollers** provide greater load-carrying capacity and longer useful life.

Be sure you get the greatest value for your roller bearing dollars—*invest them in Hyatts!*

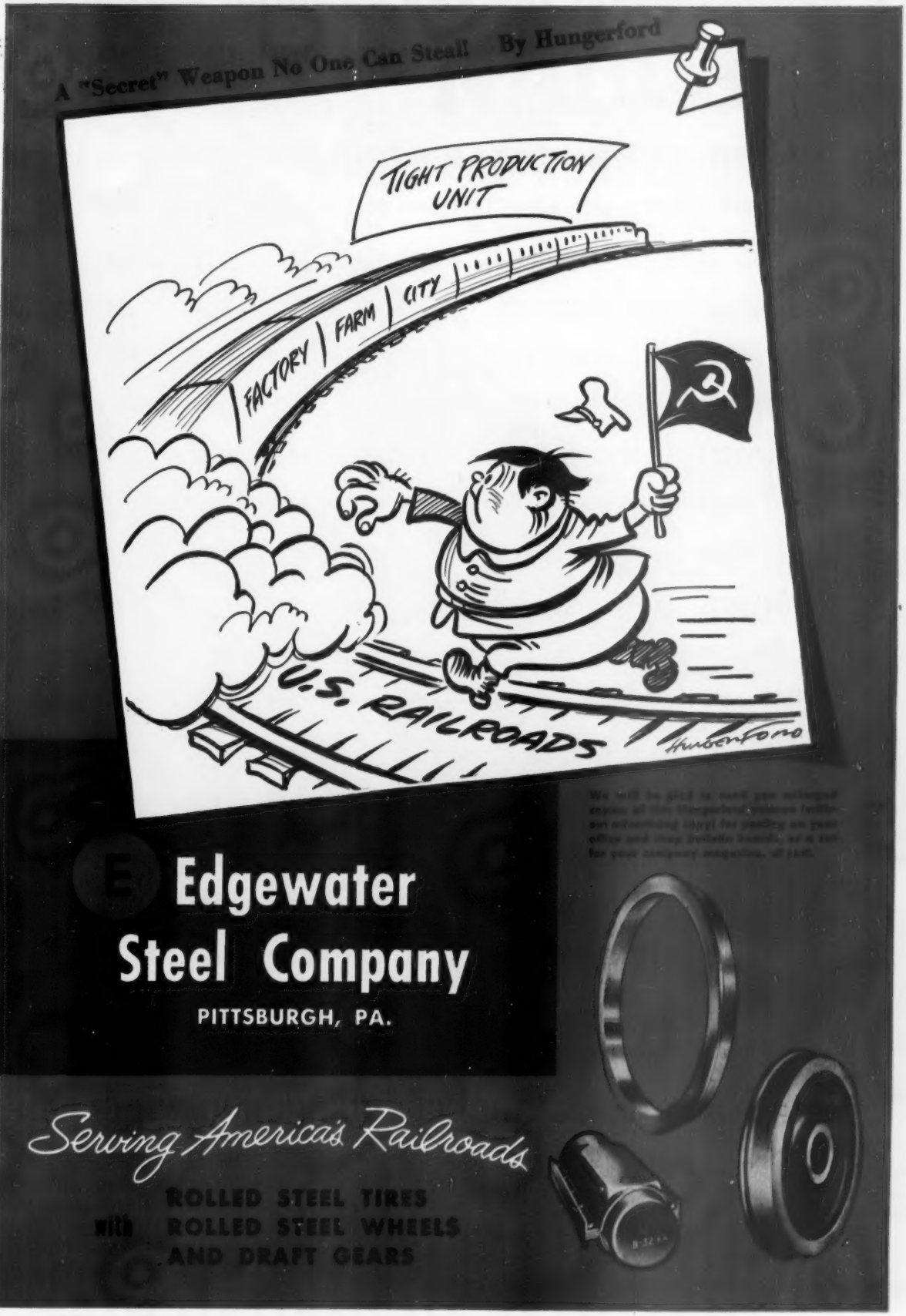
REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF JUNE AND SIX MONTHS OF CALENDAR YEAR 1954

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1954	Total (inc. misc.) 1953	Operating Expenses: Maint. Way and Structures: Total 1954	Total 1953	Deprec. and Retirements	Maint. Equipment: Total 1954	Total 1953	Deprec. and Retirements	Traffic	Transportation	Total 1954	Total 1953	Operating ratio 1954	Operating ratio 1953	Net from railway operation	Railway tax accruals	Net railway operating income 1954	Net railway operating income 1953
Louisiana & Arkansas	June	752	1,931	53	2,071	2,728	249	414	19	252	297	88	72	595	1,251	1,510	60.4	55.3	821	344	408	610
	6 mos.	752	12,247	334	13,088	15,072	1,699	2,283	134	1,593	1,668	530	460	3,527	7,761	8,588	59.3	57.0	5,327	2,193	2,720	3,147
Louisville & Nashville	June	4,735	14,658	1,016	16,786	20,507	2,837	2,891	231	3,701	4,170	947	350	5,973	13,485	14,673	80.3	71.5	3,301	1,916	1,958	3,062
	6 mos.	4,734	86,760	5,418	99,636	118,777	17,271	16,370	1,358	22,723	23,093	5,620	2,082	36,050	82,040	84,654	82.3	71.3	17,596	9,261	11,683	17,225
Maine Central	June	944	1,681	146	1,998	2,107	492	485	28	395	350	77	18	698	1,696	1,652	84.9	78.4	302	146	122	211
	6 mos.	944	11,510	611	13,043	13,347	2,591	2,774	166	2,387	2,140	459	124	4,460	10,114	10,054	77.5	75.3	2,929	1,206	1,104	1,369
Midland Valley	June	334	178	....	181	230	39	44	5	9	17	4	5	55	117	137	64.8	59.7	64	Cr 4	58	23
	6 mos.	334	983	....	1,002	1,215	239	264	32	67	89	23	33	313	704	781	70.3	64.3	298	127	109	145
Minneapolis & St. Louis	June	1,397	1,705	5	1,777	1,956	304	372	28	278	267	76	103	564	1,363	1,451	76.7	74.2	414	181	200	198
	6 mos.	1,397	9,589	24	10,000	10,609	1,680	1,949	173	1,604	1,576	461	655	3,423	8,044	8,413	80.4	79.3	1,957	934	1,008	909
Minn., St. Paul & S. S. Marie	June	3,222	3,312	152	3,655	3,682	834	871	48	585	596	99	82	1,269	2,894	3,000	79.2	81.5	761	239	505	394
	6 mos.	3,222	15,720	441	17,239	18,156	4,049	4,463	294	3,793	4,001	601	472	7,194	16,279	17,218	94.4	94.8	959	1,238	—285	—479
Mississippi Central	June	148	184	....	187	245	60	53	4	30	49	6	14	48	162	179	86.4	72.9	25	10	8	26
	6 mos.	148	1,174	....	1,197	1,419	376	320	15	165	177	36	83	304	992	1,018	82.9	71.7	205	71	79	138
Missouri-Illinois	June	172	425	....	427	497	86	80	4	85	81	36	10	112	305	306	71.3	61.6	123	69	61	79
	6 mos.	172	2,508	1	2,526	2,974	459	464	24	496	460	161	59	679	1,755	1,753	69.5	58.9	771	410	386	548
Missouri-Kansas-Texas	June	3,241	5,499	288	6,381	7,617	898	1,179	93	977	1,114	239	247	2,461	4,891	5,356	76.7	70.3	1,489	128	931	922
	6 mos.	3,241	31,355	1,571	36,395	43,877	5,428	6,340	605	5,630	6,605	1,431	1,471	14,219	28,596	31,141	78.6	71.0	7,799	2,213	3,326	5,098
Missouri Pacific	June	6,921	15,099	905	17,649	20,495	3,050	3,897	300	3,165	4,080	815	478	6,554	13,998	16,350	79.3	79.8	3,651	1,053	1,921	2,158
	6 mos.	6,923	88,815	4,839	103,843	119,742	17,983	22,269	1,692	19,304	23,597	4,761	2,892	40,433	84,562	95,915	81.4	80.1	19,281	5,930	9,087	12,657
International-Great Northern	June	1,103	2,325	168	2,702	3,329	531	728	33	483	618	122	61	1,114	2,308	2,772	85.4	83.3	395	115	183	331
	6 mos.	1,103	13,826	822	15,963	19,772	3,036	4,342	219	2,827	3,412	700	370	6,645	13,593	16,119	85.2	81.5	2,370	672	1,301	2,030
Gulf Coast Lines	June	1,724	3,110	76	3,393	3,555	693	823	55	506	562	111	92	1,242	2,686	2,795	79.15	78.61	707	Cr 20	510	418
	6 mos.	1,724	19,259	430	20,987	22,925	4,144	5,142	313	3,095	3,248	653	554	7,003	15,676	16,901	74.69	73.72	5,312	1,023	2,849	2,876
Monongahela	June	177	458	....	462	674	62	396	16	78	66	14	1	136	293	691	63.4	102.5	169	27	28	—224
	6 mos.	177	2,825	....	2,846	3,748	385	818	98	357	425	78	5	1,010	1,807	2,685	63.5	71.6	1,039	163	170	3
Montour	June	51	156	....	167	251	14	45	2	40	78	18	1	60	125	205	74.6	81.5	43	48	52	52
	6 mos.	51	851	....	919	1,292	94	185	15	319	471	111	6	332	809	1,144	88.0	88.5	110	269	294	267
Nashville, Chatt. & St. Louis	June	1,032	2,507	145	2,969	3,207	451	593	38	408	502	134	119	1,101	2,186	2,465	73.6	76.8	782	369	420	400
	6 mos.	1,032	15,534	780	18,390	20,414	2,980	3,065	253	2,465	3,040	821	702	6,737	13,606	14,452	74.0	70.8	4,784	2,152	2,340	2,960
New York Central	June	10,713	44,036	9,798	61,407	71,962	9,533	9,650	1,020	11,287	14,342	2,362	1,091	26,475	51,777	57,051	84.3	79.3	9,630	4,607	2,729	6,190
	6 mos.	10,713	257,212	52,264	355,647	415,404	50,899	56,126	6,070	72,437	84,622	14,288	6,592	163,067	313,400	343,024	88.1	82.6	42,247	27,516	2,967	30,220
Pittsburgh & Lake Erie	June	221	2,547	62	2,741	4,527	466	584	41	854	1,081	289	75	1,052	2,667	3,395	97.3	75.0	74	106	559	1,237
	6 mos.	221	15,799	386	17,203	26,039	2,520	3,152	246	5,782	6,438	1,736	452	6,584	16,681	19,909	97.0	76.5	521	1,403	4,104	5,944
New York, Chicago & St. Louis	June	2,185	11,803	165	12,441	13,951	1,404	1,695	142	1,983	2,239	357	303	4,496	8,654	9,651	69.6	69.2	3,787	1,869	1,539	1,730
	6 mos.	2,185	67,172	889	70,292	83,196	8,193	10,044	894	11,851	13,235	2,087	1,901	25,835	50,459	56,382	71.8	67.8	19,833	9,743	8,067	11,052
New York, New Haven & Hartford	June	1,770	7,344	4,249	13,032	14,126	1,666	2,707	256	1,862	1,960	413	189	5,503	9,964	11,277	76.5	79.8	3,068	875	1,271	855
	6 mos.	1,770	42,154	24,201	75,214	82,108	10,948	13,626	1,658	11,370	12,021	2,404	1,062	33,613	61,672	65,877	82.0	80.2	13,542	5,290	2,257	4,611
New York Connecting	June	21	254	....	277	315	131	94	25	20	24	....	....	84	238	204	85.8	64.9	39	84	—49	36
	6 mos.	21	1,709	....	1,848	2,214	530	464	150	115	167	....	....	501	1,165	1,221	63.0	55.1	683	508	151	524
New York, Ontario & Western	June	541	528	....	548	672	134	146	17	84	93	23	24	256	529	556	96.4	82.8	20	36	—93	4
	6 mos.	541	2,946	....	3,028	3,551	726	708	108	539	533	135	140	1,530	3,118	3,126	103.0	88.0	—90	219	—747	—197
New York, Susquehanna & Western	June	120	450	40	511	491	47	59	5	62	59	12	8	224	369	360	72.3	73.3	141	34	53	48
	6 mos.	120	2,530	227	2,873	2,908	306	347	32	388	363	74	47	1,306	2,217	2,159	77.2	74.2	656	201	133	271
Norfolk & Western	June	2,135	13,993	367	15,095	16,431	2,165	2,289	317	2,891	3,283	677	326	4,365	10,357	11,158	68.6	67.9	4,738	3,011	2,401	2,733
	6 mos.	2,135	75,984	1,995	81,895	92,207	13,090	13,792	1,874	18,841	20,363	4,032	1,964	26,901	64,524	68,484	78.8	74.3	17,371	12,175	9,029	11,673
Norfolk Southern	June	620	846	....	855	927	192	202	13	133	113	28	52	267	701	685	82.0	73.8	154	71	44	93
	6 mos.	620	4,786	....	4,849	5,461	1,077	1,219	78	728	727	166	300	1,517	3,974	4,291	81.9	78.6	876	375	270	360
Northern Pacific	June	6,866	13,041	754	14,965	15,975	2,805	3,249	267	2,632	2,621	461	340	5,707	12,278	12,685	82.4	79.4	2,687	1,240	1,591	1,658
	6 mos.	6,866	68,946	3,084	78,607	85,807	13,987	15,177	1,587	16,957	16,543	2,738	1,981	33,961	71,253	71,539	90.6	83.4	7,354	7,109	2,061	6,775
Northwestern Pacific	June	331	1,217	4	1,246	1,181	280	265	18	95	82	4	6	361	761	735	61.1	62.2	485	198	132	231
	6 mos.	331	6,236	19	6,411	6,533	1,876	1,859	128	577	620	25	33	2,109	4,722	5,012	73.7	76.7	1,689	529	204	256
Oklahoma City-Ada-Atoka	June	132	81	....	82	91	23	24	2	2	2	....	2	21	54	52	65.1	56.9	29	8	6	12
	6 mos.	132	704	....	711	556	127	133	16	8	8	....	12	123	300	295	42.2	53.0	411	166	162	102
Pennsylvania	June	10,051	54,055	10,471	72,427	90,376	9,061	12,576	1,381	15,280	19,363	2,970	1,186	31,601	59,968	72,612	82.8	80.3	12,459	4,882	5,460	7,494
	6 mos.	10,051	313,237	64,259	423,788	522,412	51,683	68,475	8,660	92,649	115,043	17,839	7,416	192,474	362,452	428,918	85.5	82.1	61,336	30,127	17,074	42,690
Pennsylvania-Reading Seashore Lines	June	358	659	201	887	907	180	220	24	101	113	22	11	488	814	942	91.8	103.9	73	121	—193	—297
	6 mos.	358	3,526	750	4,391	4,578	1,161	1,292	146	612	610	131	63	2,836	4,890	5,406	111.4	118.1	—499	721	—2,065	—2,243

(Continued on page 54)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REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF JUNE AND SIX MONTHS OF CALENDAR YEAR 1954

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1954	Total (inc. misc.) 1953	Operating Expenses: Maint. Way and Structures: Total 1954	Total 1953	Deprec. and Retirements	Maint. Equipment: Total 1954	Total 1953	Deprec. and Retirements	Traffic	Transportation	Total 1954	Total 1953	Operating ratio 1954	Operating ratio 1953	Net from railway operation	Railway tax accruals	Net railway operating income 1954	Net railway operating income 1953
Pittsburg & Shawmut	June	97	150	....	151	210	46	46	4	39	44	12	5	38	141	159	93.1	75.6	10	5	34	69
	6 mos.	97	982	....	988	1,190	200	267	22	252	309	71	28	228	778	962	78.8	80.8	209	32	367	377
Pittsburgh & West Virginia	June	132	591	....	597	802	115	162	24	123	184	36	65	167	506	620	84.8	77.3	91	25	58	118
	6 mos.	132	3,599	....	3,618	4,654	575	766	141	731	1,070	217	370	1,002	2,898	3,475	80.1	74.7	720	149	516	747
Reading	June	1,305	7,349	550	8,563	11,185	1,100	1,972	222	1,696	2,284	436	157	3,545	6,910	8,858	80.7	79.2	1,653	496	1,107	1,485
	6 mos.	1,305	47,641	3,411	54,913	67,013	6,700	9,771	1,205	10,504	13,627	2,636	938	22,484	43,081	51,489	78.5	76.8	11,832	3,955	6,679	8,425
Richmond, Fredericksburg & Potomac	June	118	1,424	452	2,144	2,190	320	471	30	333	295	70	22	716	1,516	1,599	70.7	73.0	628	266	204	248
	6 mos.	118	8,671	3,161	13,739	14,677	1,824	2,295	155	2,022	1,814	420	133	4,499	9,298	9,588	67.7	65.3	4,441	1,948	1,611	1,772
Rutland	June	392	345	....	380	395	82	78	9	49	56	12	24	155	339	361	89.0	91.4	42	25	—10	—15
	6 mos.	392	2,022	—	2,259	2,681	451	471	33	351	406	73	139	967	2,062	2,443	91.3	91.1	197	148	—112	—72
Sacramento Northern	June	265	224	....	231	369	124	63	61	17	31	4	2	76	229	190	99.5	51.5	1	24	—42	99
	6 mos.	265	1,141	....	1,180	2,469	465	335	81	77	146	23	13	423	1,039	1,073	88.1	43.4	141	101	—71	776
St. Louis-San Francisco	June	4,601	8,743	465	9,959	11,379	1,595	1,657	152	1,640	1,730	522	351	3,855	7,958	8,115	79.9	71.3	2,001	877	927	1,434
	6 mos.	4,601	50,993	2,536	58,067	64,496	9,461	9,918	909	9,828	10,644	3,055	2,125	22,539	47,174	48,528	81.2	75.2	10,893	4,337	4,694	7,187
St. Louis, San Francisco & Texas	June	159	517	3	543	376	46	61	6	34	39	1	26	161	280	309	51.5	82.2	263	101	107	3
	6 mos.	159	2,201	23	2,350	2,738	260	374	33	199	234	7	156	918	1,604	1,780	68.2	65.0	747	281	198	254
St. Louis Southwestern Lines	June	1,562	4,880	22	5,081	6,316	692	1,043	41	596	673	107	172	1,608	3,257	3,743	64.1	59.3	1,825	806	783	961
	6 mos.	1,562	28,620	92	29,763	38,504	4,341	6,115	314	3,905	4,008	633	1,025	9,199	19,555	22,219	65.7	57.7	10,207	6,289	2,303	5,642
Seaboard Air Line	June	4,078	10,207	941	12,016	12,457	1,649	1,784	184	2,246	2,335	536	354	4,059	8,783	8,988	73.1	72.2	3,232	1,261	1,845	1,940
	6 mos.	4,078	66,153	6,518	79,228	85,325	12,351	13,605	1,103	15,857	14,476	3,192	2,166	25,643	57,086	60,128	72.1	70.5	22,141	8,276	11,817	12,889
Southern	June	6,286	16,480	1,406	19,451	22,739	2,957	3,056	249	3,724	3,971	781	425	6,728	14,902	15,449	76.6	67.9	4,549	2,255	1,939	3,326
	6 mos.	6,286	103,323	7,736	121,922	139,548	17,620	18,028	1,429	22,996	23,764	476	2,551	39,555	88,594	92,095	72.7	66.0	33,328	15,497	15,440	21,430
Alabama Great Southern	June	326	1,250	82	1,447	1,701	197	231	18	305	312	59	33	454	1,062	1,139	73.4	66.9	385	226	165	287
	6 mos.	326	7,465	370	8,694	10,234	1,335	1,402	180	1,676	2,062	366	199	2,633	6,271	7,014	72.1	68.5	2,423	1,002	1,205	1,481
Cinn., New Orleans & Texas Pacific	June	337	3,235	151	3,573	4,063	494	400	42	553	838	102	79	886	2,165	2,369	60.6	58.3	1,408	792	625	775
	6 mos.	337	19,078	959	21,383	24,600	2,896	2,633	251	3,664	4,885	783	430	5,410	13,258	14,673	62.0	59.7	8,125	4,399	3,549	4,529
Georgia Southern & Florida	June	397	698	63	824	789	204	134	8	65	63	6	22	293	627	451	76.1	57.2	197	41	24	80
	6 mos.	397	4,012	466	4,971	5,178	1,121	977	52	407	455	39	120	1,629	3,545	3,040	71.3	58.7	1,426	238	151	486
New Orleans & Northeastern	June	203	942	55	1,053	1,175	545	187	22	149	113	42	19	334	1,106	584	105.0	49.7	—53	Cr 22	—26	196
	6 mos.	203	5,325	255	6,022	6,860	1,303	968	127	835	724	247	117	1,411	3,979	3,432	68.1	50.0	2,043	1,277	779	1,174
Southern Pacific	June	8,121	40,643	3,268	47,014	50,463	5,308	5,777	460	9,487	9,914	1,880	846	17,824	35,499	37,074	75.5	73.5	11,515	4,977	4,537	4,570
	6 mos.	8,120	208,006	16,384	240,673	275,878	29,510	32,911	2,979	51,246	55,944	11,080	5,021	96,154	193,803	207,819	80.5	75.3	46,870	22,317	18,826	25,172
Texas & New Orleans	June	4,292	9,175	601	10,432	12,057	1,959	2,109	133	1,465	1,589	152	274	3,902	8,197	8,781	78.6	72.8	2,236	808	459	1,165
	6 mos.	4,292	56,274	3,103	63,648	75,260	11,122	12,726	754	9,017	9,853	848	1,622	23,674	48,956	52,603	76.9	69.9	14,693	5,544	3,364	6,964
Spokane International	June	152	264	1	279	318	53	62	2	24	21	10	6	74	169	173	60.6	54.2	110	14	65	74
	6 mos.	152	1,524	4	1,604	1,651	327	354	14	152	135	58	33	424	1,005	975	62.7	59.1	599	167	286	332
Spokane, Portland & Seattle	June	944	2,300	99	2,540	2,642	374	412	58	384	415	106	32	821	1,716	1,799	67.6	68.1	824	272	461	500
	6 mos.	944	12,657	432	13,933	15,770	2,114	2,243	306	2,224	2,129	630	173	4,865	9,942	9,910	71.4	62.8	3,991	1,392	2,334	3,065
Tennessee Central	June	286	314	4	337	355	79	73	7	59	72	23	13	123	300	319	89.0	89.8	37	23	—17	—14
	6 mos.	286	2,065	8	2,199	2,601	455	568	34	351	402	135	73	749	1,772	2,044	80.6	78.6	427	142	80	183
Texas & Northern	June	8	54	....	57	112	3	5	....	10	7	2	1	6	24	27	42.8	24.3	33	1	17	23
	6 mos.	8	417	....	441	757	25	28	1	51	43	15	6	51	163	176	37.0	23.3	278	7	164	179
Texas & Pacific	June	1,836	5,385	387	6,331	7,073	1,056	1,003	105	1,111	1,248	246	194	2,180	4,897	4,981	77.3	70.4	1,434	336	787	993
	6 mos.	1,833	33,972	1,944	39,150	44,104	6,454	6,125	555	6,438	7,064	1,457	1,208	12,953	29,172	29,909	74.5	67.8	9,978	3,509	4,281	6,294
Texas Mexican	June	161	218	....	235	282	49	55	5	26	41	10	8	75	176	191	74.9	67.8	59	19	13	27
	6 mos.	161	1,348	....	1,432	1,753	310	342	37	167	193	58	53	372	1,021	1,105	71.3	63.1	410	168	110	219
Toledo, Peoria & Western	June	239	523	....	534	662	75	125	8	65	52	11	46	137	359	401	67.2	60.5	175	71	49	81
	6 mos.	239	3,503	....	3,561	3,907	586	677	40	341	283	67	272	795	2,218	2,266	62.3	58.0	1,344	579	430	562
Union Pacific	June	9,816	33,414	3,314	39,922	44,159	5,620	6,755	510	6,977	8,370	1,504	997	13,538	29,352	33,274	73.5	75.4	10,569	6,140	2,638	2,584
	6 mos.	9,818	193,115	14,750	225,486	250,808	28,428	36,112	2,820	43,029	49,163	8,502	6,342	82,187	172,340	193,779	76.4	77.3	53,146	32,551	12,000	12,074
Utah	June	99	56	....	57	98	13	19	2	36	37	9	1	26	83	95	146.2	97.0	—26	8	—43	14
	6 mos.	108	420	....	421	542	91	111	11	257	248	54	4	175	572	623	136.0	114.9	—152	53	—180	—60
Virginian	June	611	3,023	1	3,138	3,050	455	447	62	641	733	210	46	667	1,908	2,100	60.8	68.9	1,231	697	704	572
	6 mos.	611	17,060	7	17,679	19,034	2,541	2,632	378	3,785	4,311	1,140	273	4,261	11,408	12,471	64.5	65.5	6,272	3,684	3,573	3,584
Wabash	June	2,393	7,502	446	8,671	10,043	1,272	1,423	210	1,268	1,352	362	305	3,801	7,060	7,551	81.4	75.2	1,610	440	533	964
	6 mos.	2,393	47,431	2,175	53,972	58,961	7,218	7,624	708	8,637	7,687	2,165	1,851	22,912	43,013	43,477	79.7	73.7	10,958	3,410	3,779	6,380
Ann Arbor	June	294	796	....	814	805	162	99	9	133	115	30	29	318	663	588	81.5	73.0	151	59	57	82
	6 mos.	294	4,277	....	4,329	4,601	567	609	44	798	723	181	172	1,952	3,611	3,411	83.4	74.1	718	259	265	536
Western Maryland	June	857	3,242	6	3,441	4,395	468	582	49	641	624	220	97	1,123	2,517	2,640	73.2	60.1	924	432	676	1,018
	6 mos.	857	19,851	22	21,022	25,567	2,949	3,150	334	3,936	4,264	1,299	580	6,787	15,390	16,484	73.2	64.5	5,632	2,734	3,878	5,229
Western Pacific	June	1,193	3,656	258	4,033	4,867	741	891	73	630	660	177	172	1,268	3,048	3,332	75.6	68.5	985	513	432	764
	6 mos.	1,193	21,450	1,195	23,183	30,013	4,320	5,162	498	3,826	3,914	1,021	1,131	7,604	18,303	20,088	79.0	66.9	4,880	2,269	2,330	4,147
Wisconsin Central	June	1,042	2,416	56	2,619	2,687	474	482	35	364	385	81	72	976	1,991	2,023	76.0	75.3	628	140	375	250
	6 mos.	1,042	13,209	202	14,222	16,198	2,128	2,249	232	2,475	2,648	461	427	5,829	11,498	12,169	80.8	75.1	2,724	704	1,198	1,645

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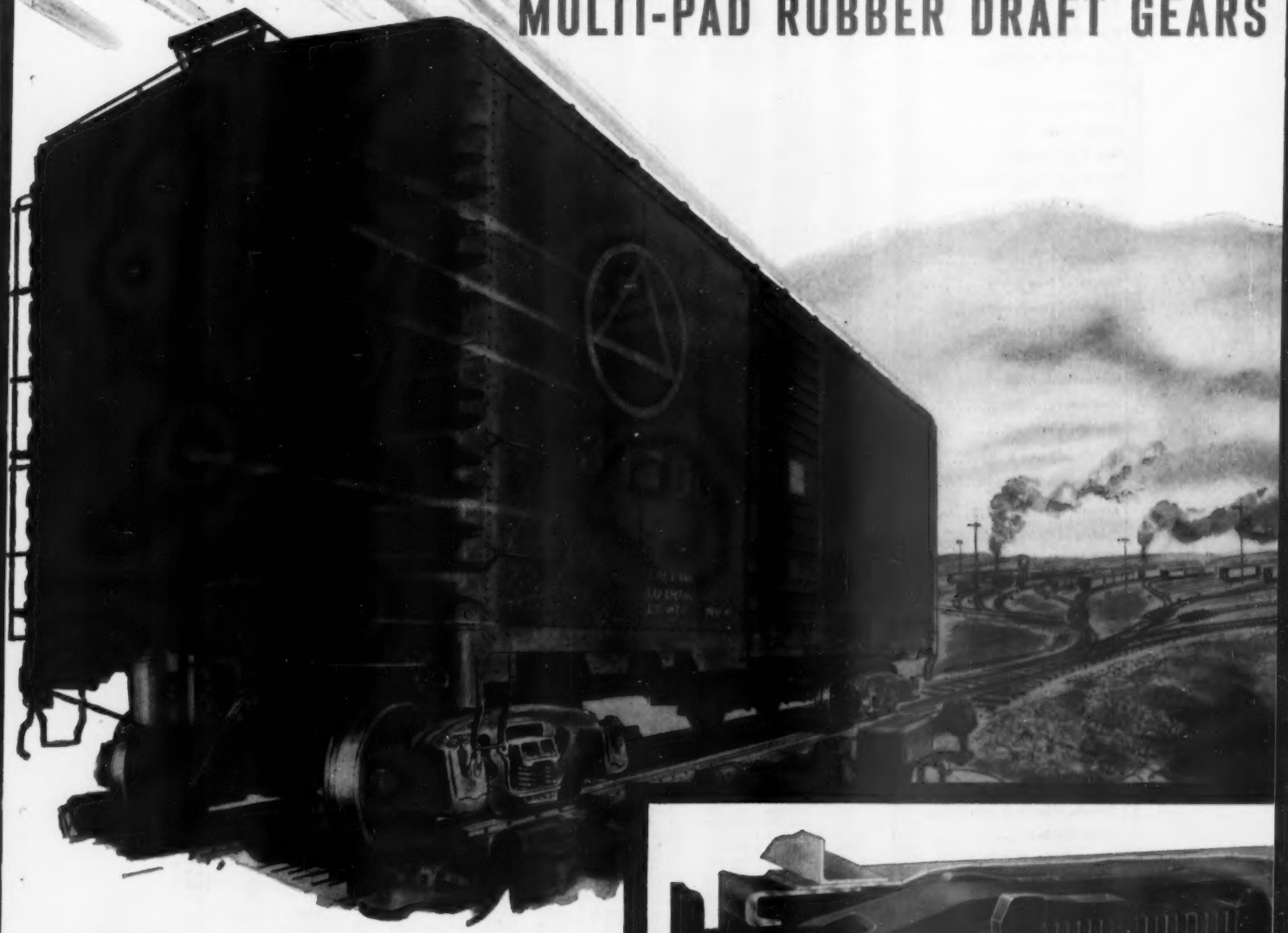
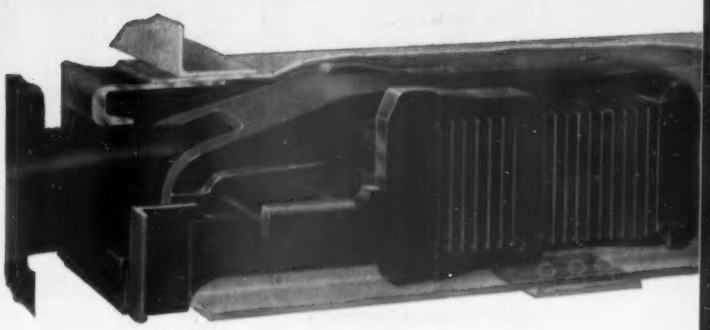
MULTI-PAD RUBBER DRAFT GEARS





National MF-275 fits all cars with standard sill construction and AAR standard yokes (as shown); MF-275-1 for use with F coupler and yoke. National Multi-Pads eliminate slack in yoke and pocket.

A-93

SEVERE SHOCKS, that result in costly lading damage and car maintenance, can be substantially reduced by using National Multi-Pad Rubber Draft Gears in place of friction gears.

That's because National Multi-Pad Rubber Draft Gears have *greater cushioning capacity.*

Tests show 57,000 foot-pounds average capacity at the 4-inch travel mark for the *AAR Certified* National MF-275 compared to 22,066 foot-pounds average capacity for friction gears (AAR Friction Gear Approval Tests).

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Freight Operating Statistics of Large Railways — Selected Items

Region	Road	Year	Miles of road operated	Train miles	Locomotive Miles: Principal and helper	Locomotive Miles: Light	Car Miles: Loaded (thousands)	Car Miles: Per cent loaded	Ton-miles (thousands): Gross excl. locos & tenders	Ton-miles (thousands): Net rev. and non-rev.	Road-locos. on lines: Serviceable: Unstored	Road-locos. on lines: Serviceable: Stored	Road-locos. on lines: B.O.	Road-locos. on lines: Per cent B.O.
New Eng. Region	Boston & Maine	1954	1,665	250,095	255,558	9,449	9,570	64.6	626,296	243,350	72	1	7	8.8
		1953	1,668	258,896	264,439	9,634	10,083	68.8	628,444	255,952	83	5	14	13.7
	N. Y., N. H. & Hfd	1954	1,747	281,995	281,995	19,343	12,079	66.5	749,000	296,041	95	..	6	5.9
		1953	1,742	311,775	312,224	19,410	12,770	67.8	790,112	324,318	100	..	2	2.0
Great Lakes Region	Delaware & Hudson	1954	793	183,065	188,337	10,397	8,586	64.6	595,889	291,137	37	5	3	6.7
		1953	795	211,187	217,448	11,583	10,285	70.4	702,486	366,310	44	25	12	14.8
	Del., Lack. & Western	1954	962	258,390	272,398	20,515	11,441	65.4	754,461	317,966	62	..	2	3.1
		1953	962	289,265	306,071	23,015	13,494	69.5	883,484	403,257	65	1	..	..
	Erie	1954	2,225	539,046	542,154	17,997	30,362	67.0	1,908,629	750,703	163	..	2	1.2
		1953	2,237	591,114	595,739	21,347	34,513	68.4	2,153,457	893,088	171	..	..	..
	Grand Trunk Western	1954	952	254,588	259,785	2,014	8,730	59.1	626,608	243,506	55	2	18	24.0
		1953	952	296,404	304,252	2,314	9,655	61.4	670,590	272,815	67	1	14	17.1
	Lehigh Valley	1954	1,150	207,891	211,351	5,592	10,175	64.4	690,382	304,839	31	2	1	2.9
		1953	1,151	236,525	241,209	8,637	12,039	66.9	826,063	387,104	32	1	..	..
	New York Central	1954	10,663	2,365,496	2,408,493	90,115	97,168	59.3	7,015,933	3,028,653	576	149	173	19.3
		1953	10,667	2,757,645	2,835,612	113,599	112,542	61.7	8,050,668	3,594,885	714	52	220	22.3
	New York, Chic. & St. L.	1954	2,161	676,108	700,478	6,426	28,489	64.0	1,984,336	841,348	170	44	35	14.1
		1953	2,160	804,330	832,645	9,035	31,815	66.5	2,238,516	1,005,177	200	6	36	14.9
	Pitts. & Lake Erie	1954	221	55,465	55,685	....	2,734	63.9	239,261	145,277	15	7	..	..
		1953	221	81,983	84,211	54	4,120	69.8	353,748	223,877	22	6	6	17.6
	Wabash	1954	2,381	518,195	519,898	6,828	23,078	64.5	1,496,133	555,632	103	..	..	..
		1953	2,381	527,197	532,694	7,928	23,372	66.7	1,512,578	606,928	121	17	12	8.0
Central Eastern Region	Baltimore & Ohio	1954	6,077	1,443,130	1,581,693	128,373	54,020	60.9	4,503,888	2,102,774	431	87	106	17.0
		1953	6,081	1,684,895	1,874,164	176,137	70,275	63.3	5,397,116	2,647,927	494	31	122	18.9
	Central of New Jersey	1954	209	53,530	57,963	202	3,138	63.7	363,229	238,806	15	..	..	..
		1953	213	71,650	77,723	458	3,883	58.5	473,610	305,945	21	24	..	..
	Central of Pennsylvania	1954	613	123,773	124,847	5,977	4,737	64.0	356,111	182,416	69	2	11	13.4
		1953	617	132,967	138,715	11,531	5,477	68.0	402,450	212,952	73	8	7	8.0
	Chicago & Eastern Ill.	1954	868	124,146	124,146	2,609	5,098	63.9	364,189	178,032	26	..	3	10.3
		1953	868	122,719	122,719	2,686	5,510	69.9	358,346	173,953	27	..	2	6.9
	Elgin, Joliet & Eastern	1954	236	83,079	83,581	....	2,632	64.3	207,916	112,108	32	6	3	7.3
		1953	236	109,255	110,941	266	3,743	67.3	295,884	164,816	40	..	1	2.4
	Pennsylvania System	1954	9,906	2,721	2,901,517	197,654	117,226	61.4	8,614,230	3,900,787	745	341	361	24.9
		1953	9,941	3,280,811	3,523,455	298,647	140,775	64.3	10,220,176	4,870,424	1,044	146	336	22.0
	Reading	1954	1,305	284,620	288,266	10,085	11,111	61.0	865,503	429,592	156	36	17	8.1
		1953	1,309	369,673	376,120	20,349	13,994	64.4	1,112,868	588,458	183	12	23	10.6
	Western Maryland	1954	857	158,973	170,017	8,521	6,319	62.7	528,276	294,836	55	25	..	..
		1953	873	189,394	215,101	21,056	7,099	67.3	577,035	333,289	99	21	10	7.7
Pocahontas Region	Chesapeake & Ohio	1954	5,032	1,245,809	1,268,304	30,877	53,155	58.0	4,454,340	2,464,172	324	92	176	29.7
		1953	5,036	1,328,877	1,357,043	37,214	61,688	57.9	5,235,663	2,881,832	404	71	170	26.4
	Norfolk & Western	1954	2,113	591,841	626,473	49,063	27,461	58.5	2,461,270	1,312,753	203	43	30	10.9
		1953	2,113	654,603	688,484	46,043	31,123	58.8	2,754,374	1,482,118	225	32	17	6.2
Southern Region	Atlantic Coast Line	1954	5,341	869,928	869,928	10,474	26,763	57.8	1,908,999	813,490	240	..	7	2.8
		1953	5,367	924,128	924,139	10,951	29,661	60.1	2,073,633	909,683	244	..	5	2.0
	Central of Georgia	1954	1,731	186,599	186,625	2,091	7,285	67.0	491,809	228,937	69	..	1	1.4
		1953	1,754	212,501	212,553	2,558	7,917	68.0	532,758	247,028	71	17	..	..
	Gulf, Mobile & Ohio	1954	2,718	285,717	285,717	429	15,003	68.6	1,019,479	472,167	87	..	2	2.2
		1953	2,718	318,525	318,525	312	16,658	70.9	1,098,877	528,895	85	..	4	4.5
	Illinois Central	1954	6,537	1,265,528	1,270,105	41,540	48,091	62.1	3,426,269	1,521,260	501	76	77	11.8
		1953	6,538	1,454,933	1,458,620	49,237	53,255	63.6	3,770,450	1,712,385	527	69	71	10.6
	Louisville & Nashville	1954	4,722	884,187	903,744	17,591	31,783	61.5	2,383,919	1,146,836	216	86	31	9.3
		1953	4,728	1,044,656	1,101,115	22,689	37,546	62.5	2,808,111	1,372,528	243	47	62	17.6
	Nash., Chatt. & St. Louis	1954	1,032	176,348	180,830	3,997	6,068	69.3	392,887	180,343	50	..	3	5.7
		1953	1,032	193,524	198,132	3,873	6,529	71.8	418,852	197,608	48	..	6	11.1
	Seaboard Air Line	1954	4,067	679,920	679,920	4,105	26,357	59.9	1,927,111	798,420	144	..	9	5.9
		1953	4,070	715,004	715,004	1,693	27,921	62.7	1,978,143	834,926	144	..	7	4.6
	Southern	1954	6,262	934,924	935,034	12,821	39,035	65.8	2,550,750	1,128,236	266	..	4	1.5
		1953	6,263	1,004,213	1,004,296	12,775	41,142	70.6	2,590,086	1,193,150	245	27	22	7.5
Northwestern Region	Chicago & North Western	1954	7,850	698,763	702,657	10,986	29,692	65.3	2,057,386	920,452	175	38	68	24.2
		1953	7,849	778,257	781,406	14,233	32,346	64.6	2,304,199	1,018,899	264	46	69	18.2
	Chicago Great Western	1954	1,437	134,765	134,765	182	7,674	68.2	503,008	220,968	28	..	5	15.2
		1953	1,435	134,859	134,977	328	8,119	69.2	561,709	267,826	31	..	3	8.8
	Chic., Milw., St. P. & Pac.	1954	10,631	964,331	981,028	22,312	41,457	64.0	2,847,702	1,262,874	285	92	44	10.5
		1953	10,662	1,063,757	1,085,169	33,639	44,852	64.5	3,089,364	1,387,347	355	73	40	8.5
	Chic., St. P., Minn. & Omaha	1954	1,606	156,973	158,106	4,508	4,970	67.3	339,795	147,899	64	3	26	28.0
		1953	1,606	166,905	169,938	6,853	5,264	70.3	354,068	159,389	66	..	25	27.5
	Duluth, Missabe & Iron Range	1954	566	142,409	142,900	1,072	6,545	50.4	713,677	429,248	64	4	6	8.1
		1953	567	198,118	199,248	1,400	9,441	50.9	971,310	589,488	63	..	7	10.0
	Great Northern	1954	8,294	1,068,718	1,074,623	28,261	44,842	64.5	3,404,168	1,688,168	244	181	37	8.0
		1953	8,291	1,131,740	1,134,749	32,504	47,751	66.2	3,565,414	1,814,406	297	162	34	6.9
	Minneap., St. P. & St. Ste. M.	1954	4,169	383,801	386,565	3,591	12,345	68.2	799,264	374,976	95	6	16	13.7
		1953	4,172	398,808	403,529	3,470	13,641	66.5	908,498	428,818	106	2	13	10.7
	Northern Pacific	1954	6,570	829,223	855,500	33,060	33,110	64.9	2,328,413	1,052,695	290	49	58	14.6
		1953	6,583	817,956	842,085	30,173	34,672	71.7	2,342,114	1,108,425	338	31	35	8.7
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.)	1954	13,076	2,200,071	2,261,803	59,657	97,811	63.7	6,681,683	2,508,963	535	142	22	3.1
		1953	13,094	2,623,002	2,729,753	81,467	115,344	63.9	7,874,172	2,986,569	579	116	45	6.1
	Chic., Burl. & Quincy	1954	8,824	1,083,068	1,081,754	32,211	45,881	68.1	3,005,310	1,345,056	214	86	33	9.9
		1953	8,833	1,160,163	1,164,491	39,791	48,536	66.3	3,269,154	1,473,211	294	50	82	19.2
	Chic., Rock I. & Pac.	1954	7,861	891,004	889,062	2,405	33,872	59.4	2,493,845	1,007,913	163	12	8	4.4
		1953	7,895	952,304	951,737	3,046	35,187	61.7	2,525,363	1,048,504	171	11	14	7.1
	Denver & R. G. Wn.	1954	2,164	285,243	303,419	27,021	13,346	72.6	900,550	423,961	59	62	18	12.9
		1953	2,313	321,209	349,247	33,754	15,630	70.5	1,087,394	526,015	80	44	36	22.5
	Southern Pacific	1954	8,065	2,231,941	2,353,360	302,658	101,973	63.5	7,126,429	2,853,272	558	121	122	15.2
		1953	8,058	2,360,574	2,488,392	289,663	103,092	62.9	7,243,851	2,902,173	697	27	126	14.8
	Union Pacific	1954	9,816	2,145,688	2,195,355	104,839	99,765	67.2	6,530,022	2,731,319	388	388	91	10.5
		1953	9,824	2,449,396	2,542,971	175,613	104,818	67.4	6,976,892	3,021,277	532	147	136	16.7
	Western Pacific	1954	1,190	220,621	222,202	11,173	9,704	71.2	644,757	298,541	40	4	..	..
		1953	1,190	238,421	245,981	16,419	11,188	71.2	747,378	349,129	41	12	3	5.4
Southwestern Region	International-Gt. Northern*	1954	1,103	149,042	149,042	....	5,972	63.5	421,139	182,987	51	..	..	..
		1953	1,104	176,932	176,932	....	6,713	66.3	503,858	221,830	50	3	3	5.4
	Kansas City Southern	1954	886	133,488	133,704	132	7,845	65.3	547,596	238,200	23	..	1	4.2
		1953	886	177,579	177,609	492	9,536	66.7	674,230	315,728	26	1	..	..
	Mo.-Kans.-Texas Lines	1954	3,229	342,438	342,438	3,641	13,559	63.0	895,144	376,311	88	..	1	1.1
		1953	3,230	377,783	377,783	4,338	14,721	63.8	962,384	386,937	90	11	7	6.5
	Missouri Pacific*	1954	6,904	979,766	981,262	11,286	43,405	63.6	3,002,894	1,257,810	215	70	98	25.6
		1953	6,917	1,232,132	1,236,916	14,942	48,659	66.9	3,262,536	1,440,253	296	32	52	13.7
	Texas & Pacific	1954	1,827	300,282	300,282	2,869	13,618	63.5	940,384	353,636	61	..	..	..
		1953	1,831	352,191	352,191	4,360	14,552	61.1	1,043,477	387,427	59	..	..	..
	St. Louis-San Francisco	1954	4,564	590,676	591,056	5,688	22,146	65.4	1,482,355	650,811	135	..	4	2.9
		1953	4,564	622,972	623,060	6,062	23,748	64.2	1,622,980	712,458	187	..	2	1.1
	St. Louis Southw. Lines	1954	1,555	289,296	289,322	1,377	13,370	69.0	831,572	371,724	55	10	7	9.7
		1953	1,561	326,633	326,689	4,413	15,953	72.0	971,612	434,324	60	17	5	6.1
	Texas & New Orleans	1954	4,279	675,703	675,703	5,787	26,236	62.9	1,827,172	771,888	152	..	42	21.6
		1953	4,279	760,012	763,388	12,766	27,930	64.4	1,924,633	825,673	207	..	35	14.5

For the Month of May 1954 Compared with May 1953

	Region, Road and Year	Freight cars on line: Home	Foreign	Total	Per Cent B.O.	G.t.m.per train-hr. excl.locos and tenders	G.t.m.per train-mi. excl.locos and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd car-mile	Net ton-mi. per car-day	Car miles per car-day	Net daily ton-mi. per road-mi.	Train-miles per train-hour	Miles per loco. per day
New Eng. Region	Boston & Maine	1954	2,994	7,276	10,270	4.7	41,182	2,509	975	25.4	756	46.0	4,715	16.4	118.0
		1953	1,612	7,670	9,282	2.2	40,668	2,430	990	25.4	869	49.7	4,950	16.8	95.5
	N. Y., N. H. & Htfd	1954	3,202	12,185	15,387	2.3	44,931	2,656	1,050	24.5	617	37.9	5,466	16.9	117.8
		1953	1,858	12,844	14,702	3.1	40,203	2,535	1,040	25.4	690	40.1	6,006	15.9	124.0
Great Lakes Region	Delaware & Hudson	1954	7,607	3,512	11,119	5.5	62,977	3,274	1,600	33.9	825	37.7	11,843	19.3	152.0
		1953	5,954	4,942	10,896	3.6	61,854	3,347	1,745	35.6	1,083	42.3	14,901	18.6	99.7
	Del., Lack. & Western	1954	8,854	8,013	16,867	4.5	50,348	2,972	1,252	27.8	601	33.0	10,662	17.2	163.2
		1953	6,490	9,998	16,488	4.7	51,744	3,115	1,422	29.9	792	38.2	13,522	16.9	177.0
	Erie	1954	12,828	15,076	27,904	5.3	67,814	3,576	1,406	24.7	876	52.9	10,884	19.2	119.8
		1953	8,440	19,412	27,852	3.3	66,741	3,679	1,526	25.9	1,053	59.5	12,879	18.3	128.3
	Grand Trunk Western	1954	4,546	8,468	13,014	3.9	52,087	2,486	966	27.9	621	37.7	8,251	21.2	119.6
		1953	3,420	9,456	12,876	4.8	48,934	2,277	926	28.3	678	39.0	9,244	21.6	130.6
	Lehigh Valley	1954	9,735	6,333	16,068	6.6	68,098	3,377	1,491	30.0	614	31.8	8,551	20.5	220.5
		1953	5,353	11,584	16,937	3.9	68,610	3,541	1,659	32.2	752	35.0	10,849	19.6	260.2
	New York Central	1954	87,155	76,327	163,482	10.5	53,392	3,008	1,299	31.2	602	32.6	9,162	18.0	101.6
		1953	72,824	93,930	166,754	7.5	51,060	2,969	1,326	31.9	708	35.9	10,871	17.5	106.3
	New York, Chic. & St. L.	1954	11,148	13,352	24,500	7.7	56,091	2,975	1,261	29.5	1,138	60.3	12,559	19.1	100.3
		1953	7,198	18,191	25,389	5.8	50,434	2,829	1,270	31.6	1,297	61.7	15,012	18.1	122.3
	Pitts. & Lake Erie	1954	11,388	6,159	17,547	6.8	63,820	4,315	2,260	53.1	283	8.3	21,205	14.8	86.4
		1953	4,173	8,540	12,713	5.5	64,131	4,317	2,732	54.3	571	15.1	32,678	14.9	78.9
	Wabash	1954	10,148	9,620	19,768	6.4	67,354	2,903	1,078	24.1	950	61.1	7,528	23.3	170.9
		1953	8,822	11,401	20,223	7.7	65,876	2,885	1,158	26.0	1,001	57.7	8,223	23.0	122.5
Central Eastern Region	Baltimore & Ohio	1954	62,576	35,180	97,756	11.6	51,140	3,159	1,475	38.9	691	29.2	11,162	16.4	92.5
		1953	54,501	45,536	100,037	6.1	47,682	3,252	1,596	37.7	858	36.0	14,047	14.9	107.1
	Central of New Jersey	1954	7,240	764	8,004	9.1	107,179	6,992	4,597	76.1	882	18.2	36,858	15.8	135.5
		1953	6,081	1,457	7,538	10.3	113,903	6,730	4,348	78.8	1,358	29.5	46,334	17.2	62.2
	Central of Pennsylvania	1954	5,475	8,942	14,417	10.6	40,647	3,001	1,537	38.5	414	16.8	9,599	14.1	76.6
		1953	3,600	10,368	13,968	7.3	40,821	3,194	1,690	38.9	494	18.7	11,134	13.5	77.0
	Chicago & Eastern Ill.	1954	3,624	2,911	6,535	10.1	53,275	2,955	1,445	34.9	885	39.6	6,616	18.2	151.4
		1953	2,807	3,453	6,260	9.6	50,174	2,949	1,431	31.6	850	38.5	6,465	17.2	148.8
	Elgin, Joliet & Eastern	1954	7,597	6,532	14,129	6.4	23,528	2,617	1,411	42.6	260	9.5	15,324	9.4	85.2
		1953	7,612	11,539	19,151	4.7	22,939	2,867	1,597	44.0	280	9.5	22,528	8.5	114.1
	Pennsylvania System	1954	108,562	95,932	204,494	11.0	58,554	3,253	1,473	33.3	615	30.1	12,703	18.5	74.5
		1953	104,536	98,962	203,498	8.0	53,281	3,200	1,525	34.6	769	34.5	15,804	17.1	88.2
	Reading	1954	21,612	11,900	33,512	6.1	45,201	3,042	1,510	38.7	406	17.2	10,619	14.9	53.3
		1953	14,723	17,221	31,944	5.4	42,862	3,016	1,595	42.1	571	21.1	14,502	14.2	72.0
	Western Maryland	1954	8,496	2,363	10,859	4.0	49,261	3,410	1,903	46.7	859	29.4	11,098	14.8	78.9
		1953	6,259	3,901	10,160	8.3	43,938	3,111	1,797	46.9	1,048	33.2	12,315	14.4	63.1
Pocahontas Region	Chesapeake & Ohio	1954	58,328	21,752	80,080	4.2	69,374	3,598	1,990	46.4	975	36.3	15,797	19.4	76.7
		1953	52,253	24,912	77,165	3.1	72,297	3,958	2,179	46.7	1,175	43.4	18,460	18.3	76.0
	Norfolk & Western	1954	41,936	6,014	47,950	2.6	74,287	4,255	2,270	47.8	80	31.5	20,041	17.9	85.8
		1953	32,546	6,445	38,991	3.3	75,000	4,258	2,291	47.6	1,192	42.5	22,627	17.8	94.7
Southern Region	Atlantic Coast Line	1954	21,437	13,199	34,636	2.8	40,318	2,202	938	30.4	737	42.0	4,913	18.4	126.7
		1953	15,496	18,277	33,773	2.2	38,641	2,256	990	30.7	866	46.9	5,468	17.2	135.2
	Central of Georgia	1954	3,512	4,636	8,148	4.9	48,292	2,648	1,233	31.4	886	42.1	4,266	18.3	95.6
		1953	2,932	5,528	8,460	4.6	45,900	2,515	1,166	31.2	914	43.1	4,543	18.3	82.2
	Gulf, Mobile & Ohio	1954	6,576	7,752	14,328	3.9	73,918	3,578	1,657	31.5	1,055	48.9	5,604	20.7	110.8
		1953	4,420	9,024	13,444	3.7	71,014	3,465	1,668	31.8	1,218	54.1	6,277	20.6	122.9
	Illinois Central	1954	31,297	19,184	50,481	4.8	48,133	2,741	1,217	31.6	955	48.6	7,507	17.8	70.1
		1953	27,216	23,990	51,206	2.3	46,353	2,625	1,192	32.2	1,075	52.5	8,449	17.9	77.4
	Louisville & Nashville	1954	39,817	12,253	52,070	3.7	48,723	2,703	1,300	36.1	702	31.6	7,835	18.1	97.1
		1953	34,542	15,218	40,760	3.2	46,841	2,696	1,318	36.6	885	38.7	9,364	17.4	110.0
	Nash., Chatt. & St. Louis	1954	3,876	3,065	6,941	3.3	44,229	2,230	1,023	29.7	801	38.9	5,637	19.9	121.0
		1953	2,668	3,931	6,599	2.7	43,243	2,172	1,025	30.3	924	42.6	6,177	20.0	132.2
	Seaboard Air Line	1954	14,529	12,571	27,100	1.7	53,156	2,874	1,191	30.3	928	51.1	6,333	18.8	170.2
		1953	10,697	15,321	26,000	2.3	52,372	2,803	1,183	29.9	1,030	54.9	6,617	18.9	143.1
	Southern	1954	19,968	22,880	42,848	3.4	50,035	2,736	1,210	28.9	848	44.6	5,812	18.3	122.7
		1953	16,005	27,914	43,919	3.3	45,755	2,599	1,197	29.0	890	43.4	6,145	17.7	121.9
Northwestern Region	Chicago & North Western	1954	21,931	25,015	46,946	5.5	51,992	3,021	1,352	31.0	626	30.9	3,782	17.7	88.7
		1953	21,281	26,300	47,581	4.4	51,187	3,051	1,349	31.5	692	34.0	4,188	17.3	72.1
	Chicago Great Western	1954	1,669	4,067	5,736	3.5	73,604	3,743	1,644	28.8	1,258	64.1	4,960	19.7	137.0
		1953	1,095	5,058	6,153	3.2	73,016	4,167	1,985	33.0	1,355	59.4	6,016	17.5	134.3
	Chic., Milw., St. P. & Pac.	1954	38,073	27,607	65,680	6.8	54,898	2,964	1,315	30.5	632	32.4	3,832	18.6	82.0
		1953	35,885	30,409	66,294	4.6	51,877	2,919	1,311	30.9	683	34.2	4,197	17.9	83.5
	Chic., St. P., Minn. & Omaha	1954	1,089	6,761	7,850	5.1	31,739	2,179	948	29.8	612	30.5	2,971	14.7	62.9
		1953	1,043	6,772	7,815	4.3	33,567	2,171	977	30.3	635	29.8	3,201	15.8	69.8
	Duluth, Missabe & Iron Range	1954	14,319	688	15,007	3.6	77,280	5,295	3,185	65.6	914	27.7	24,464	15.4	83.3
		1953	14,233	1,495	15,728	4.2	84,964	5,146	3,123	62.4	1,211	38.1	33,537	17.3	105.3
	Great Northern	1954	25,464	21,308	46,772	3.1	55,529	3,224	1,599	37.6	1,221	50.3	6,565	17.4	80.6
		1953	25,674	18,286	43,960	5.9	52,292	3,191	1,624	38.0	1,348	53.6	7,059	16.6	80.0
	Minneap., St. P. & St. Ste. M.	1954	8,059	6,441	14,500	5.4	43,743	2,089	980	30.4	860	41.6	2,901	21.0	118.6
		1953	7,453	7,490	14,943	7.0	44,252	2,284	1,078	31.4	962	46.0	3,316	19.4	117.0
	Northern Pacific	1954	21,300	14,900	36,200	6.3	51,977	2,822	1,276	31.8	957	46.4	5,169	18.5	76.9
		1953	21,679	12,931	34,610	3.7	55,018	2,881	1,363	32.0	1,036	45.1	5,432	19.2	75.5
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.)	1954	58,529	32,630	91,159	3.4	72,185	3,045	1,143	25.7	891	54.5	6,190	23.8	113.3
		1953	55,264	33,893	89,157	3.1	69,002	3,012	1,142	25.9	1,116	67.4	7,358	23.0	129.1
	Chic., Burl. & Quincy	1954	22,129	19,099	41,228	3.2	58,653	2,780	1,244	29.3	1,060	53.1	4,917	21.1	113.9
		1953	19,756	24,347	44,103	2.8	57,511	2,827	1,274	30.4	1,096	54.4	5,380	20.4	96.0
	Chic., Rock I. & Pac.	1954	14,480	19,182	33,662	5.4	55,667	2,802	1,132	29.8	966	54.6	4,136	19.9	166.6
		1953	12,029	22,524	34,553	4.1	51,807	2,660	1,105	29.8	997	54.2	4,284	19.5	166.5
	Denver & R. G. Wn.	1954	9,293	3,632	12,925	5.0	64,311	3,171	1,493	31.8	1,039	45.1	6,320	20.4	80.4
		1953	7,410	6,413	13,823	4.0	60,881	3,396	1,643	33.7	1,217	51.3	7,336	18.0	83.8
	Southern Pacific	1954	29,091	48,654	77,745	2.1	61,153	3,221	1,290	28.0	1,206	67.9	11,412	19.2	114.5
		1953	31,101	50,187	81,288	2.3	56,009	3,094	1,239	28.2	1,198	67.6	11,618	18.3	112.4
	Union Pacific	1954	34,020	29,047	63,067	2.6	79,855	3,071	1,284	27.4	1,419	77.1	8,976	26.2	87.4
		1953	32,974	30,964	63,938	2.5	70,968	2,882	1,248	28.8	1,522	78.3	9,921	24.9	111.8
	Western Pacific	1954	2,945	2,578	5,523	4.5	74,358	2,941	1,362	30.8	1,780	81.3	8,093	25.4	178.6
		1953	2,392	3,734	6,126	6.4	76,709	3,154	1,473	31.2	1,949	87.8	9,464	24.5	154.9
Southwestern Region	International-Gt. Northern*	1954	758	5,517	6,275	3.0	58,532	2,834	1,232	30.6	916	47.1	5,352	20.7	102.2
		1953	798	8,304	9,102	2.1	57,643	2,860	1,259	33.0	780	35.6	6,481	20.2	101.4
	Kansas City Southern	1954	1,053	5,601	6,654	3.6	86,906	4,121	1,793	30.4	1,115	56.2	8,673	21.2	198.1
		1953	916	5,960	6,876	4.5	76,400	3,827	1,792	33.1	1,462	66.2	11,495	20.1	231.3
	Mo.-Kans.-Texas Lines	1954	5,789	5,991	11,780	6.5	56,551	2,625	1,103	27.8	1,038	59.3	3,759	21.6	136.1
		1953	4,681	6,202	10,883	6.8	53,457	2,553	1,026	26.3	1,152	68.7	3,864	21.0	123.3
	Missouri Pacific*	1954	22,095	18,486	40,581	2.6	67,206	3,073	1,287	29.0	1,049	56.9	5,877	21.9	88.3
		1953	19,937	16,414	36,351	3.2	58,298	2,661	1,175	29.6	1,294	65.3	6,717	22.0	111.3
	Texas & Pacific	1954	3,422	6,114	9,536	4.7	71,225	3,143	1,182	26.0	1,212	73.5	6,244	22.7	172.0
		1953	2,190	7,122	9,312	3.7	66,497	2,968	1,102	26.6	1,339	82.8	6,826	22.4	203.7
	St. Louis-San Francisco	1954	16,820	9,514	26,334	2.7	50,090	2,516	1,105	29.4	793	41.3	4,600	20.0	151.1
		1953	12,413	11,922	24,335	3.3	46,810	2,610	1,146	30.0	948	49.2	5,036	18.0	118.9
	St. Louis Southw. Lines	1954	2,708	4,057	6,765	4.0	60,050	2,878	1,287	27.8	1,794	93.5	7,711	20.9	138.8
		1953	2,537	5,789	8,326	1.6	62,195	2,976	1,330	27.2	1,672	85.3	8,975	20.9	134.3
	Texas & New Orleans	1954	7,204	15,442	22,646	1.6	55,954	2,725	1,151	29.4	1,136	61.4	5,819	20.7	124.7
		1953	5,257	14,624	19,881	1.3	50,018	2,551	1,094	29.6	1,332	70.0	6,224	19.8	112.1

* Report of trustee or trustees.

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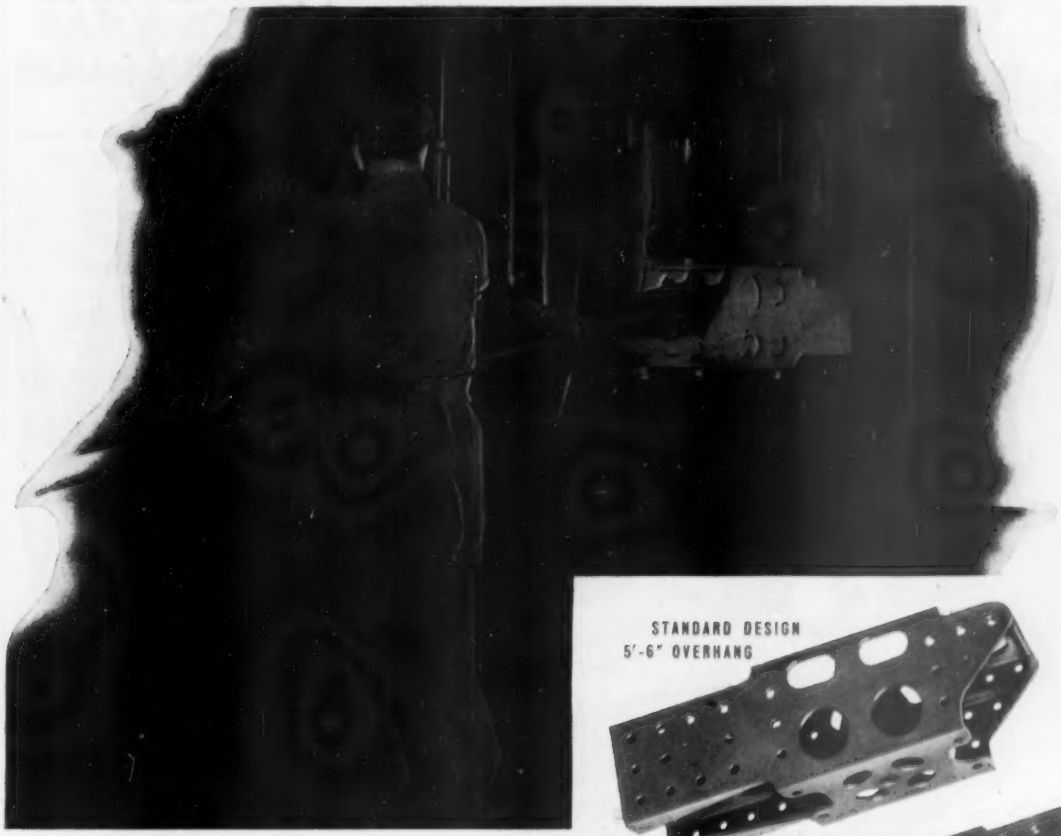

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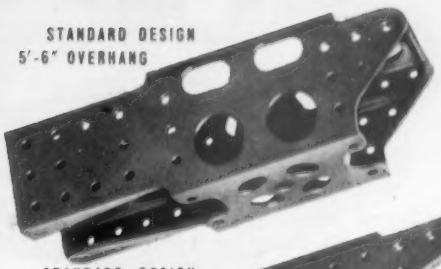

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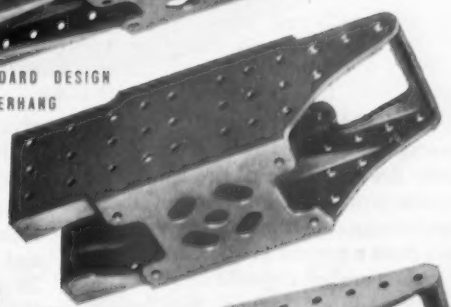

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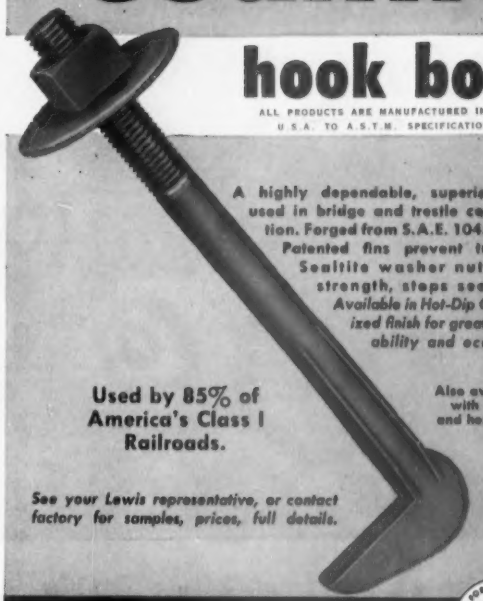

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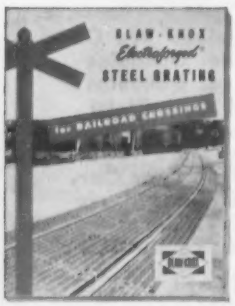

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Current Publications

PAMPHLETS

FABRICATION AND DESIGN OF GLUED LAMINATED WOOD STRUCTURAL MEMBERS. Bulletin No. 1069, Department of Agriculture, by Alan D. Freas and M. L. Selbo. Available from Government Printing Office, Washington 25, D.C. 60 cents.

This is the first comprehensive publication ever prepared for producers and users of glued laminated timbers for heavy construction. More than two decades of research, results of which helped get production of laminated wood started in the United States during the Thirties, are the foundation on which technical information in this handbook is laid.

All important phases of production and use of laminated structural members are covered, including selection of lumber and gluing methods and engineering design formulas for determining proper sizes of beams, columns, arches, and truss members. Data given were obtained chiefly from experiments which the laboratory carried out, and through cooperative work with manufacturers and builders.

In addition to the history of the laminating industry and collection of data from tests and research over the years, the future importance of glued and laminated structural members is discussed. It is pointed out that, as supplies of large virgin-growth trees become more scarce, the technique of "making big ones out of little ones" becomes increasingly important.

•

THE ALWEG SYSTEM; A NEW METHOD OF LAND TRANSPORT. 31 pages, illustrations. Alweg-Forschung GmbH, Postfach 681, Koeln, Germany. Available in this country from Roger D. Marshall, 1116 Woodward bldg., Washington 5, D.C. Free.

A description of the new high-speed monorail system developed by Dr. Axel L. Wenner-Gren, and the principles on which it is planned. Its operation is compared with that of conventional diesel-electric trains. Embodied in the new system are special solutions for train classification and assembly, terminal clearance, terminal-to-door delivery, wayside switching, bulk cargo handling, waybill processing, passenger ticketing, automatic train control, etc. A description of the Alweg system appeared in *Railway Age* October 27, 1952, page 14.

TRADE PUBLICATION

PAX CODE CALL SERVICE. Six pages, illustrations. Automatic Electric Company, 1033 W. Van Buren st., Chicago 7.

Describes how executives or key employees may be reached quickly anywhere in a plant or office with a special signaling device which is part of an internal business telephone system.

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In Amcreco cross ties, bridge timbers and piles, Lowry Process Pressure Treatment makes the big difference. The natural strength of the wood is preserved to assure long dependable service.

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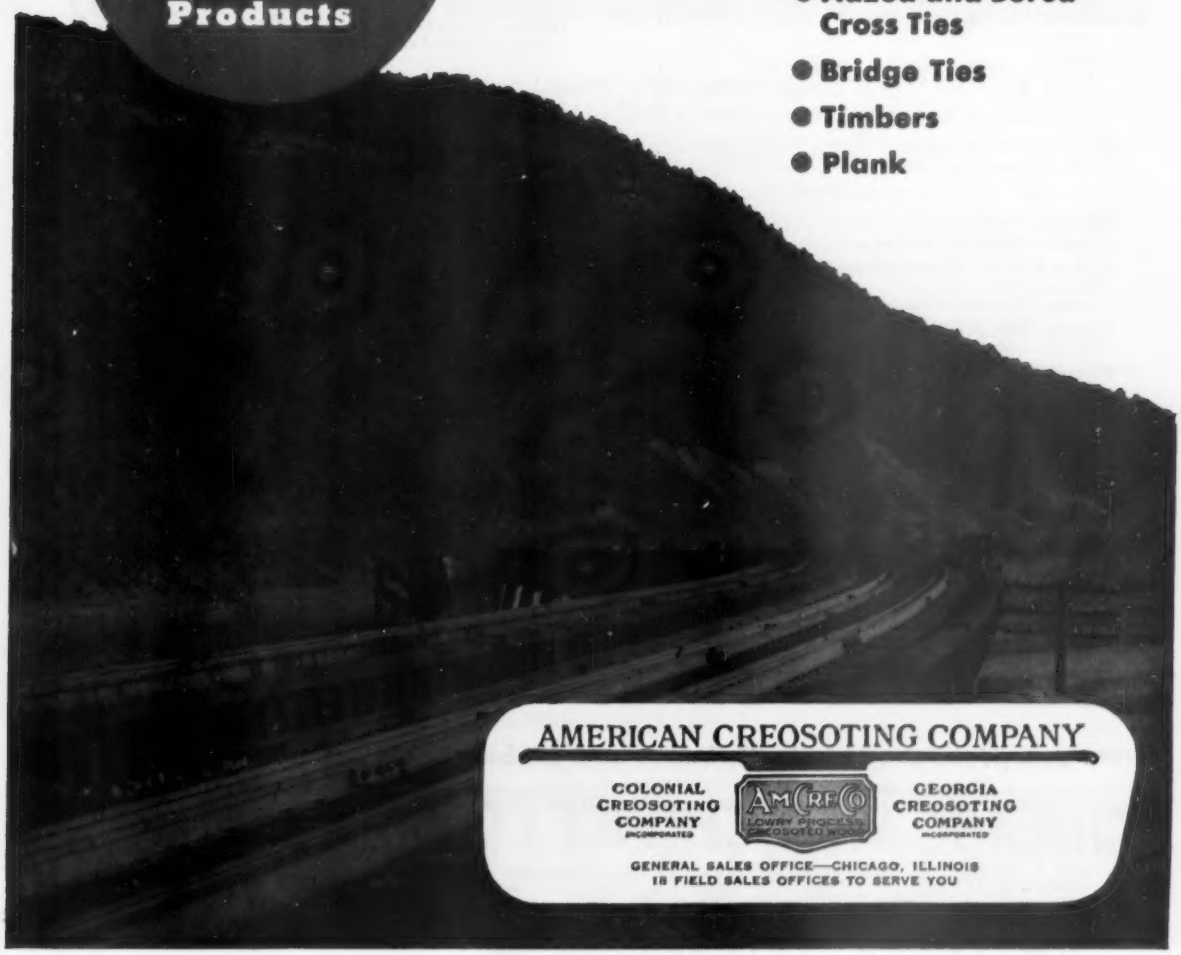

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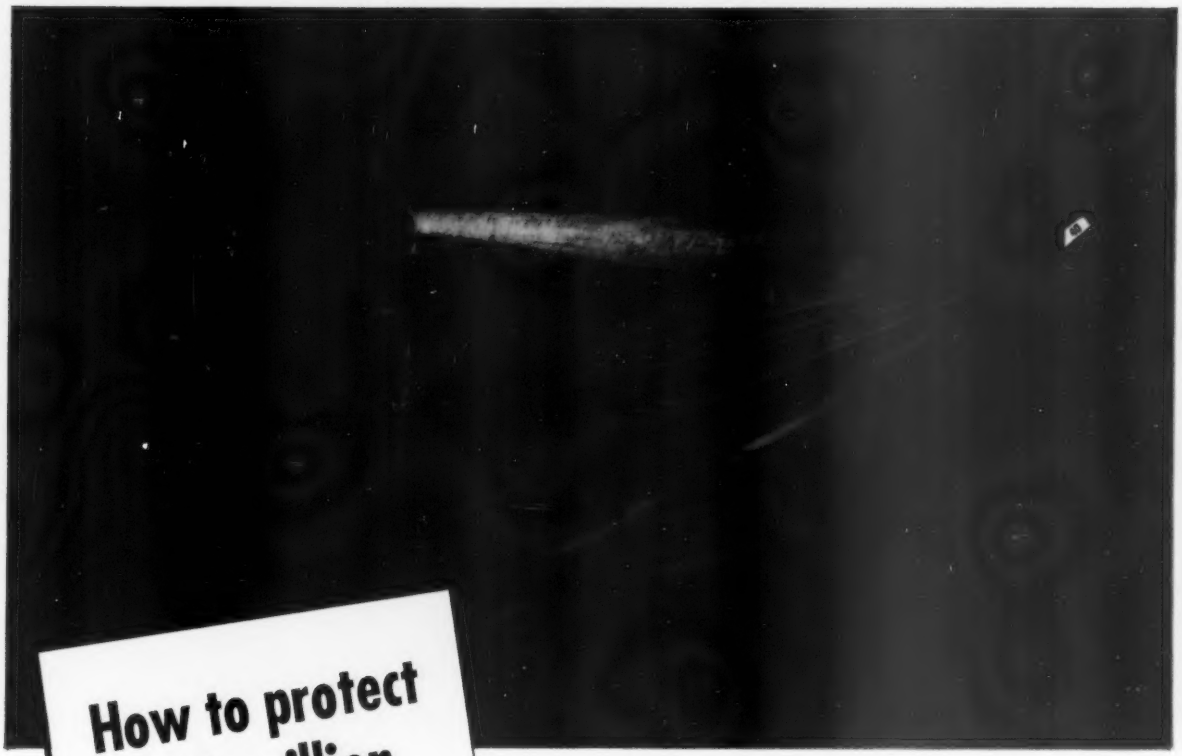


How to protect a $1-million investment for just $4.95!

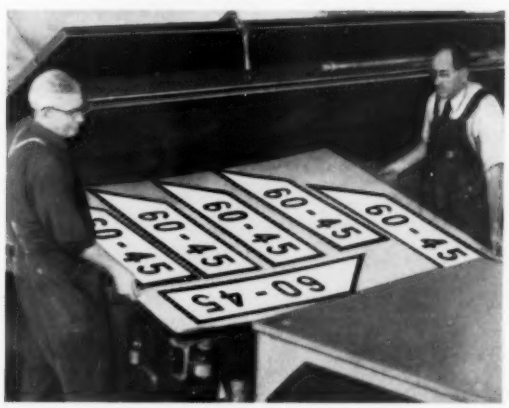
A LUXURY STREAMLINER speeds through the black, rainswept night. Up ahead the engineer knows there's a 40-mile curve. But where? And when to let up on the throttle? Suddenly, the headlamp catches a flash of yellow . . . a *reflectorized* speedboard. The throttle goes forward . . . the brakes ease on . . . in plenty of time for the $1,000,000 train, with its valuable cargo, to round the curve smoothly and safely—thanks to just $4.95 invested in a sign of "Scotchlite" Reflective Sheeting!*

Visible at night ½ mile away!

Wide-Angle Flat-Top "Scotchlite" Sheeting, as used by the Milwaukee Road on the speedboard shown, has the extra brightness and greater target value to provide nighttime recognition at a half-mile. This extra reflective power is effective even in extremely heavy rain. Furthermore, the long-term durability of "Scotchlite" Sheeting makes it the most *economical* sign surfacing material you can use. Couple this long life with the Central Sign Shop Method of fabricating signs, and you have modern signs designed for modern needs, manufactured in the most economical way possible.

Why not let us tell you more about cost-saving, investment-protecting "Scotchlite" Reflective Sheeting? We'll also give you complete information on the Central Sign Shop System. Just write: Minnesota Mining and Mfg. Co., Dept. RA-74, St. Paul 6, Minn.

**$4.95 is the average cost of a Speedboard using "Scotchlite" Reflective Sheeting as produced by the Milwaukee Road.*



THE MILWAUKEE ROAD'S Central Sign Shop is typical of the modern, efficient shops now in operation on 14 Class One roads. This shop turns out more than 1,000 reflectorized signs a month using "Scotchlite" Reflective Sheeting and the 5′ x 12′ high-speed vacuum applicator. Just *eight minutes* in the applicator and a sign is ready for use!

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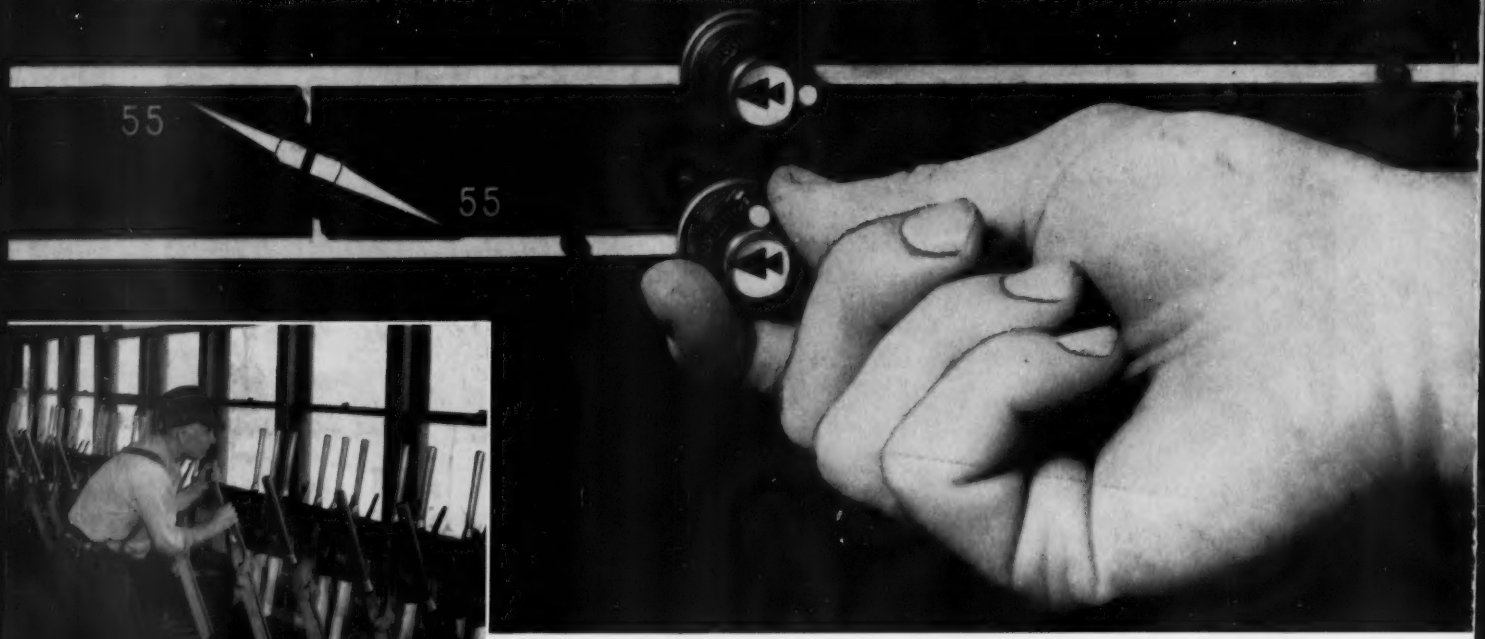
REPLACES MECHANICAL PLANT AT JUNCTION

INCREASES OPERATING FLEXIBILITY



Compared with mechanical interlocking, G-R-S all-relay interlocking is easier and faster to operate, needs less space, is not limited as to control distances.

LOCATION

An important junction, handling traffic of three major Eastern railroads.

PROBLEM

To replace an obsolete mechanical interlocking. To eliminate stops and facilitate train movements.

SOLUTION

A tail track was provided as a switching lead, and home signal limits were lengthened to remove crossovers from a curve. G-R-S all-relay interlocking was installed to replace the mechanical plant, and to provide added features.

ADDED FEATURES

- call-on aspects to bring trains into occupied blocks beyond home signals.
- special aspects to let heavy freights leaving near-by yard know that a complete route is clear so no stops will be necessary in plant.
- traffic-direction levers to provide for local either-direction moves on a single-track main. This eliminated use of forms and avoided delays of train stops.
- switching signal controls to permit back-and-forth moves without repeated line-ups by leverman.

G-R-S engineers are available to make studies of your interlocking problems. Ask your G-R-S district office for this service.

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